

Exploring Biological Sciences Preservice Teachers' Sense-Making of Assessment Feedback at a South African University

By

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DECLARATION

I, **Lungisani Ngubane** declare that:

- i. The research report entitled, “Exploring Biological Sciences preservice teachers’ sense-making of assessment feedback at a South African University” is my original work, except where indicated.
- ii. This thesis has not been submitted for any degree or examination at any other university.
- iii. This thesis does not contain other person’s writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then:
 - a. Their words have been re-written, but the general information attributed to them has been referenced;
 - b. Where their exact words have been used their writing has been placed inside quotation marks and referenced.
- iv. The work described in this thesis was carried out in the school of Education, University of KwaZulu-Natal from February 2017 to August 2019 under the supervision of Dr. T. Chirikure and Dr. D. Sibanda.
- v. Ethical clearance No. HSS/0394/ 019M was granted prior to undertaking the research.

Signed



Date: 16 August 2019

As the candidate’s supervisor, I, Dr. Tamirofo Chirikure, agree to the submission of this thesis.

Signed



Date: 16 August 2019

As the candidate’s co-supervisor, I, Dr. Doras Sibanda, agree to the submission of this thesis.

Signed



Date: 16 August 2019

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4. My friend Sanele Brian Mngadi.
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6. The participants of the study (Biological Sciences Preservice Teachers).
7. Lastly, my ancestors who have led and guided me during this study.

DEDICATION

I dedicate this work to my wife Sthembele Ncube, my son Mafandile Ngubane and my family members. I am aware of the challenges that my study has brought to the family between 2017 and 2019. May God bless you for supporting my dream.

ABSTRACT

This study explored the biological sciences preservice teachers' understandings of assessment-feedback. The guiding research questions focused on preservice teachers' understanding of assessment feedback; the type of assessment feedback they received for their assessment-tasks; how they used the assessment feedback for their assessment-tasks; and why they used it the way they did. A qualitative methodology and interpretive paradigm were used. The participants of the study were purposely selected and data was collected through questionnaires and focus-group interviews. Thirty participants completed the questionnaires and 20 were selected for the focus-group interviews. The findings of this study indicated that the Biological Sciences preservice teachers understood assessment feedback as results of assessment tasks, students' performance and reflection on the assessment tasks. The Biological Sciences preservice teachers received written feedback, oral feedback, feedback through face-to-face consultations and electronic feedback through emails and the module's e-learning site. It was evident that the Biological Sciences preservice teachers used assessment-feedback to prepare for future assessment tasks, to correct mistakes in their learning and improve their performance. The use of assessment feedback was induced by the need to strengthen conceptual understanding and improve academic performance. The findings of this study can inform how lecturers construct and deliver feedback to students.

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CHAPTER 1

INTRODUCTION

1.1 Background to the study

Preservice teacher enrolment has increased exponentially over the years at one of South Africa's universities. This increase in student enrolment has been accompanied by a growing concern by some lecturers with respect to the general performance of students across the biological sciences education modules. There are five content modules under biological sciences for educators. However, the average pass rate in Biological Sciences for Educators' modules such as biological sciences 220, 320 and 410 has been below 70% for the past five years and many of those who pass score between 50 and 60%. In each Biological Sciences for Educators module, lecturers assess students through various methods including tests, practical work report, tutorials, presentations, assignments and projects. Given the observed pass rates which are below the university's benchmark of 80% per module, lecturers are concerned about how they use feedback to improve their performances. Evans (2013) articulated that assessment feedback is a fundamental part of learning. The focus of assessment feedback is to motivate and enhance student learning, while bridging the gap between performance and the learning goals (Evans, 2013).

According to Lombard (2011), feedback is a quality phenomenon, which enlightens students about their learning. For this reason, feedback empowers students to shape their learning. However, this depends on how students use feedback provided by their lecturers. According to Evans (2013), assessment refers to a kind of measurement instrument which is an integral part of assessment. Evans (2013), further argued that feedback can have varied roles depending on the learning setting, the needs of the learner and the purpose of the task.

Race (2005) defines feedback as the information about the performance of a thing or a person. Feedback is also understood as the information delivered by an agent, concerning the performance of students (Hattie & Timperley, 2007). The same authors further argue that for feedback to be effective, it should be addressed in a learning context. While the effectiveness of feedback is emphasised, feedback to students' performance should be timely, so that it can be useful, not only for once off assessment tasks, but for future purposes (Flores, Veiga Simão, Barros, & Pereira, 2015). Feedback that is well crafted is pivotal in enhancing students' learning (Hounsell, 2007). The same author further posits that well-crafted feedback enhances students' learning into three different ways. It accelerates learning, optimises the quality of what is learned and raises individuals (Hounsell,

2007). Regarding learning acceleration, feedback catalyses what needs to be learned by students within a given period of time (Hounsell, 2007).

Peach, Ruinard, and Webb (2014) define assessment feedback as a way of providing information about students' development. According to Evans (2013) assessment feedback is as a way of reinforcement of reward. Therefore, this highlights that the definition of assessment feedback should incorporate varied roles, types, meanings and functions for it to make sense.

It is noted that the environment may not be conducive for feedback to take place (Lombard, 2011). The workload of lecturers is growing in relation to the expansion in the number of students (Higgins, Hartley, & Skelton, 2002). Another hindrance is that feedback maybe masked by the marks or grades (Race, 2005). Students tend to focus more on the mark allocation than feedback. The lecturers' handwriting also seems to be a problematic factor in delivering quality feedback to students. At times students find it difficult to read and make sense of feedback delivered to them (Higgins et al., 2002). As a result, the provision of feedback in higher education is fading.

1.2 Significance of the study

The findings of this study provide insight into students' understanding and use of assessment feedback, which might be useful to lecturers in their efforts to support student learning. Since the preservice teachers are destined to become graduate teachers who will assess learners in future, the findings of this study will serve to inform lecturers if the lived assessment feedback cycle experiences adequately serve the secondary role of experiential learning. The outcomes of this study will also add to the debate and literature on assessment feedback with respect to South African students.

1.3 Purpose

The purpose of this study is to explore how biological sciences preservice teachers use assessment feedback to enhance learning of their biological sciences modules. The duration of their learning is four years.

1.3.1 Objectives of the study

1. To explore Biological Sciences preservice teachers' understandings of assessment feedback.
2. To explore the types of assessment feedback received by Biological Sciences preservice teachers.

3. To explore how Biological Sciences preservice teachers use assessment feedback in their learning.
4. To understand why Biological Sciences preservice teachers use assessment feedback the way they do.

1.3.2 Research Questions

1. What are the Biological Sciences preservice teachers' understandings of assessment feedback?
2. What type of feedback do Biological Sciences preservice teachers receive for their assessment tasks?
3. How do Biological Sciences preservice teachers use the feedback they get for their assessment tasks?
4. Why do Biological Sciences preservice teachers use assessment feedback the way they do?

1.4 Structure of the thesis

This study is divided into six chapters. The six chapters of this study define the diverse phases of the study. Chapter 1 of this study offers the background to the study, the problem statement, purpose and objectives of the study, the research questions and the summary for all chapters.

In chapter 2 of this study, the literature concerning the assessment feedback and conceptual framework are reviewed.

In chapter 3, the researcher discusses the research methodology that was employed in this study. Features such as research design, interpretive paradigm, sampling method, data collection methods are discussed. Data analysis, validity, trustworthiness, ethical issues and limitations of the study are also discussed in chapter 3.

In chapter 4, the researcher presents the data collected from participants in the study.

Chapter 5 presents the analysis of data as well as the discussion of findings in conjunction with the literature review.

In chapter 6 the summary of the findings, recommendations for further studies and conclusion are presented respectively.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In the previous chapter, the background, rationale and purpose of the study were presented together with the research questions. In this chapter, the researcher presents the relevant literature on the meaning of assessment, types of assessment feedback and purposes, definitions of assessment feedback, the challenges to provision of the feedback, an outline of both international and local studies, as well as the conceptual framework that will assist in making sense of the findings of this study.

2.2 Meaning of Assessment

Researchers define assessment in different ways. Kay (2016) defines assessment as a mediating factor which determines a student's relationship to the university. For this reason, assessment results in isolation rather than commitment, provoking general feelings of obedience rather than a sense of belonging (Kay, 2016). Similarly, McCann (2009) states that assessment is the measure of students' progress, which allows them to shape their learning. Further, McCann (2009) states that assessment is a tool for learning, which develops students as lifelong self-assessors. For assessment to develop students as lifelong self-assessors, it must be used with an idea of encouraging students rather than a means of directing them forward.

According to Bono (2015) assessment is a process of appraising, judging or evaluating students' work or performance and using this to shape and improve competence. This provides a direct feedback about the learning and teaching process and it is beneficial for both students and lecturers (Bono, 2015). Flores et al. (2015) point out that assessment creates a defined representation of the curriculum.

According to Torrance (2012) assessment is the process of seeking and interpreting evidence that can be used by students and lecturers to make decisions about teaching and learning. Torrance (2012) also says that assessment empowers lecturers and students to understand where they need to go and how best to get there. It is therefore, very vital for lecturers to change methods of assessments if they want students to change their learning (Beaumont, O'Doherty, & Shannon, 2011).

The traditional use of assessment in higher education which encompasses the examination or written tests, seem to limit the rationality of assessment to meet employability agendas (Flores et al., 2015).

Furthermore, Flores et al. (2015) argue that approaches of assessment such as written tests and examinations do not update lecturers on what students have learned or not. Therefore, traditionally, use of assessment seems to discourage students from engaging with feedback that is given by lecturers.

The Flores et al. (2015) definition encourages student learning to be specific. Students should know what to learn and what not to learn from the curriculum. However, this requires students to be self-driven in determining what they see as important in their learning. If students are to be specific with what they learn, this may encourage the students' effective engagement with the feedback given.

2.3 Types of assessment feedback

There are different types of assessment feedback. Maggs (2014) argued that there are several methods of giving feedback to students, namely, oral feedback, written feedback, self-regulation, and electronic feedback. In this chapter, oral feedback, electronic feedback and self-regulation feedback are discussed in detail.

2.3.1 Oral feedback

Oral feedback is face-to-face communication between students and the lecturer (Maggs, 2014). Research has shown that Oral feedback is made up of two features (Maggs, 2014). The first feature is oral feedback during lectures with the whole class and the second feature is feedback through face-to-face consultations. According to Brestlin (2014), feedback should be viewed as a dialogue rather than a one way transmission process. Hence, this suggests that lecturers should have several discussions concerning feedback with their students. Discussions between both lecturers and students concerning feedback may create opportunities for students to construct their own meaning from the received feedback (Brestlin, 2014). If students are to learn from feedback, they should analyse it, ask questions about it and discuss it with other students (Brestlin, 2014). Murtagh and Baker (2009) state that oral feedback is most valued in helping lecturers to follow lesson observations of their teaching. Effective observations of lessons can change students' attitude and approach towards their learning (Race, 2005). This type of feedback is helpful, because it comes with body language, facial expression, tone of the voice and the emphasis (Race, 2005). Therefore, this promotes effective learning to students. In order for feedback to promote effective learning, students should be able to attend to it and act on it (O'Donovan, 2016). However, students need to be prepared, so that they will be able to understand feedback and know what to do with it. This can benefit learning and students' achievement at all spheres of education (Maggs, 2014). Although there is a general understanding of the importance of feedback in higher education, research has shown that the number of institutions

using distance learning as well as the enrolment of students is increasing, especially the advancement of technology (Maggs, 2014). As a result, this weakens oral feedback between students and the lecturers.

2.3.2 Written feedback

Cochrane (2008) argued that written feedback has not been well researched in higher education, while students continue to prompt the need for meaningful and constructive feedback. The same author further asserts that university students need meaningful and constructive feedback to guide their learning. It is therefore, highlighted that in order for written feedback to be effective in guiding learning, it should focus on growth, rather than on grading (Cochrane, 2008). Furthermore, Agius (2014) adds that written feedback is an important development of higher-order thinking skills, since it promotes reflective and analysis of one's work. Feedback should persuade and enhance student learning; otherwise, students may be unable to make sense of the feedback provided (Cochrane, 2008).

It is evident that written feedback was the only source of feedback in higher education (Higgins et al., 2002). Written feedback seems to be more powerful than oral feedback, since it remains as an everlasting record for future learning (Smallbone, 2010). It is advantageous to students because they can refer to it anytime. Though, to students who may be thinking in terms of their marks for the entire program of study, may not experience the impact of written feedback (Scot, 2014). In written feedback, students read the comments on the test, assignment or practical book (Murtagh & Baker, 2009). Institutions in higher education seem to over rely on written feedback; its advantage is that students can refer to it again and again (Race, 2005). Therefore, this denotes that they can continue to learn from it. Cochrane (2008) argues that for students to learn from written feedback, it should further persuade and enhance student learning. In order for feedback to enhance students learning, it should position them towards the demands and level of the course and provide them with the sense of their lecturers' expectations (Dunworth, 2016).

Written feedback can be time consuming sometimes (Race, 2005). It may also result in poor quality because students may find it difficult to read the lecturers' hand writing (Lombard, 2011). In relation to the aforementioned statement, Cochrane (2008) highlighted that lecturers need to diverge from the transmission process when providing feedback to students and identify the students' perspective. According to Murtagh and Baker (2009) written feedback notifies and advances future work. However, this depends on the ability and understanding of a student on how to use the feedback

provided. In order for feedback to advance future work, it has to bridge the gap between a students' assessed performance and learning (O'Donovan, 2016).

Research has shown that written feedback is the powerful aspect that makes a difference to student achievement (O'Donovan, 2016). O'Donovan further adds that written feedback can have a huge and positive impact when compared with other features of teaching or interventions planned to advance learning. However, for feedback to make a difference to students' learning, they should possess a certain skill which could assist them to engage with feedback, though this requires lecturers' support (Cochrane, 2008). For this reason, students should be trained in how to interpret, how to make connections between the feedback and characteristics of the work they produce and how they can improve their work in future (O'Donovan, 2016). If students are to be trained in how to interpret feedback, they need to be prepared to attend to it and to know what to do with it (O'Donovan, 2016). Hence, this will ensure that students are able to attend to feedback and act on it.

2.3.3 Electronic feedback

In higher education the use of electronic feedback is currently extensive because the enrolment of students continues to grow in higher education. For this reason, the use of electronic feedback in the context of higher education is also growing. This is also due to the lack of face-to-face interactions with students, especially in online courses. According to Leibold (2015) electronic feedback is information from the educator in an online format, such as the written word, audio file and video recording. Thus, Hyland and Hyland (2006) define electronic feedback as the means by which human feedback can be provided through technology. The significant role of electronic feedback is to facilitate the delivery of feedback (Race, 2005). Furthermore, Leibold (2015) argued that electronic feedback guides students' development in their learning. For electronic feedback to guide students, lecturers need to possess a skill which assists them to provide effective feedback to students. Providing effective electronic feedback should be a valuable skill because it enhances the learning experience (Leibold, 2015).

2.3.4 Self-regulation feedback

According to Chung (2011) one of the challenges in teaching and learning is empowering students to become self-regulated. Chung (2011) posits that self-regulation refers to self-regulated thoughts, feelings and actions that are planned and regularly adapted to the fulfilment of personal goals. Self-regulation simply means that students take control of their own behaviour both in and out of the classroom (Chung, 2011). However, Evans (2013) defines self-regulation as metacognitive elements including how a student can monitor the strategies he or she uses to approach learning. This includes

planning, monitoring and regulating their learning (Evans, 2013). Once students monitor their strategies, this will automatically play a huge role in monitoring strengths and weaknesses of their performances (Murtagh & Baker, 2009).

2.4 Assessment feedback

Research has shown that assessment feedback is a broad term; however, its meaning and design depend on the context in which it is addressed (Phillips, 2015). According to Phillips (2015) assessment-feedback is a consequence of performance and orientates students to learning. Leibold (2015) further said that assessment feedback is information from an agent; such as a teacher, peer and other about one's performance. This means that it points out the strengths and weaknesses concerning the performance of students. In the same vein, Maggs (2014) argued that assessment feedback makes suggestions for improvement to work and is useful in areas where ongoing assessment takes place. Therefore, students understand how they have performed and how to improve their performance for future purposes.

In order to improve future performance, lecturers should provide students with the information to advance their learning. Scot (2014) agrees that assessment feedback is something that lecturers give to students in order to help them understand the results they received. Students' understanding of the results that they have obtained can improve their future work. DeLuca (2014) adds that assessment feedback refers to comments and grades lecturers provide for the assessment tasks submitted by students. The comments and grades should be of high quality to ensure that students improve their learning.

It is evident that assessment feedback is the most powerful and potent part of the assessment with regard to improving future student learning (O'Donovan, 2016). McNeill (2015) asserts that assessment feedback is central to the field of teaching and learning, since it assists students to make sense of their learning. Previous researchers have defined assessment feedback in different ways. Though there is no widely accepted definition of assessment feedback (Scot, 2014).

Lombard (2011) defines assessment feedback as a quality phenomenon, which enlightens students about their learning. Similarly, Bono (2015) highlights that assessment feedback is information that a student can confirm, add to, overwrite and restructure information in memory. This study has disclosed how assessment feedback enlightens preservice teachers about their learning; though the above mentioned was not the objective of the study, it was automatically attained. One of the objectives of the study was to explore Biological Sciences preservice teachers' understandings of assessment-feedback. Lombard (2011) postulates that assessment feedback empowers students to

shape their learning. Hence, research has shown that the tone of assessment feedback and the context in which it is given play a huge role in determining its effectiveness in shaping students' learning (Brickman, 2014). According to Leibold (2015), lecturers should create an assessment feedback tone that inspires students to use the comments to improve future work. This was supported by Agius (2014) that students value assessment feedback that includes advice for improvement. However, in order for assessment feedback to improve learning, it should be delivered timely, because of its relevance for future work (Agius, 2014). It is therefore, assumed that the above mentioned may motivate students to continue their hard work and strive to continue to develop and improve.

Mulliner (2017) defines assessment feedback as an issue of knowledge of results or correction of errors. In this case, feedback is seen as the end product of learning. It is therefore, the responsibility of students to use this end product to correct errors in their learning, which could assist in building on their previous assessment-tasks.

Evans (2013) argued that assessment feedback can have varied roles in students' learning depending on the setting, needs of the learner and purpose of the task. During this study, the engagement with the participants determined the varied roles that assessment feedback plays on the learning of Biological Sciences preservice teachers. The findings indicated that assessment feedback assists students to avoid repeating the same mistakes spotted by the lecturer in previous assessment tasks. The participants further indicated that feedback helps them to improve their performance in the module.

Although assessment feedback is viewed as the information about the performance of a thing or a person (Race, 2005), it is also understood as the information delivered by an agent concerning the performance of students (Hattie & Timperley, 2007). In the current study, an analysis of the data concerning the delivery of the assessment feedback to students offered an insight to how assessment feedback is delivered to preservice teachers. In addition, this provided some greater understanding on how Biological Sciences preservice teachers use feedback to improve their future performance. The findings indicated that assessment feedback is delivered to students orally during lectures and face-to-face consultations, written form in the marked tasks and through emails or the website learn@ukzn. Furthermore, the findings indicated that participants use the assessment feedback in three ways: to prepare for future assessment-tasks, correct the mistakes in their learning and to improve their performance. For assessment feedback to be effective, it should be addressed in a learning context (Hattie & Timperley, 2007). Hence, assessment feedback to students' performance should be timely so that it can be useful, not only for once off assessment tasks, but for future

purposes (Flores et al., 2015). Leibold (2015) further adds that the timely provision of assessment feedback will assist students to build on their previous experiences. Thus, students obtaining instant assessment feedback perform better than students who receive delayed assessment feedback (Leibold, 2015).

Akkuzu (2014) argues that assessment feedback is the information that is presented to an individual following a performance that reflects upon the students' assessment task. Akkuzu further articulates that assessment feedback provides students with a means to improve their performance and correct their errors. Taking these into account, assessment feedback serves as a phenomenon for promoting learning and growth (Akkuzu, 2014). In addition, assessment feedback may certainly encourage growth in learning to teach and may persuade positive change in students.

Kay (2016) argues that, for assessment-feedback to encourage growth in learning, any comments to students' work need to be appropriately interpreted and acted upon by the student. Thus, students interpret and act on assessment feedback that is timely because it is still relevant to their learning.

Peach et al. (2014) define assessment feedback as a way of providing information about students' development. According to Evans (2013) assessment feedback is a way of reinforcement of reward. Therefore, this highlights that the definition of assessment feedback should incorporate varied roles, types, meanings and functions for it to make sense. A good assessment practice is accompanied by feedback, while assessment without feedback is unproductive for students' learning (Beaumont et al., 2011). Beaumont et al. (2011) adds that assessment feedback has also received the lowest satisfaction in higher education. Thus, based on the review of the literature concerning the above argument, it appears that assessment feedback results in the improvement of learners' academic performance.

Murtagh and Baker (2009) further argued that assessment feedback offers students the information to feed-forward into their future piece of work. It is therefore, the responsibility of lecturers to convey the messages to students about what is acceptable or not in their academic work (Murtagh & Baker, 2009). The participants of this study were final year university students who were pursuing a BA honours degree. The study used two methods of data collection. Firstly, the questionnaire was employed to 125 final year students, which consisted of open-ended questions designed to encourage rich responses from the participants. Secondly, focused-group interviews were also employed with two participants from the cohort.

The review of the literature in this section has shown that students in higher education still witness dissatisfaction regarding assessment feedback in their learning. Previous researchers identified the

causes of dissatisfaction concerning assessment feedback in higher education: firstly, overcrowding in the university, which sometimes makes it difficult for lecturers to provide quality assessment-feedback; secondly, students pay more attention to assessment feedback attached to a good mark; and lastly, students are not trained to engage with assessment feedback effectively. The current study provided insight into students' understanding and use of assessment feedback, which might be useful to lecturers in their efforts to support student learning. This study also served to inform lecturers whether the lived assessment feedback cycle experiences adequately serve the secondary role of experiential learning. The results of this study also contribute to the debate and literature on assessment feedback in the South African context.

2.5 The purpose of feedback

A number of studies have previously examined the issue of feedback from the point of view of purpose (Dunworth, 2016). They found that the purpose of feedback in higher education is to improve performance and understanding of students' learning. The purpose of feedback is to empower students to have a better understanding of their learning goals (Mulliner, 2017). Feedback that empowers students explains the grade in terms of strengths and weaknesses, so students can edit their work (DeLuca, 2014). Research has shown that feedback can have a great impact on student learning; however, in order for it to be effective, feedback needs to be of high quality (McNeill, 2015). Quality and effective feedback seem to guide students through the learning process (Kay, 2016).

A study conducted by Evans (2013) focused on the feedback that students receive within their course work from multiple sources. Firstly, the study aimed to examine the nature of assessment feedback in higher education through the undertaking of a systematic review of the literature. Secondly, this study aimed to identify and discuss dominant themes and discourses, as well as consider gaps within the research literature. Thirdly, the study focused on exploring the notion of the feedback gap in relation to the conceptual development of the assessment feedback field in higher education and implications for future research as well as feedback landscape, which is informed by sociocultural and socio-critical perspectives. In the current study, the researcher argues that the main purpose of assessment feedback is to provide students with an understanding of how they can close the gap between current and expected performances. Document analysis was employed in this study as the data collection method. During this study, an analysis of 291 students' articles was provided. The participants of the study were university students from different countries such as Netherlands, Hong Kong, Taiwan, New Zealand, Canada and Belgium. One of the findings of the study was that there is

a lack of work which addresses feedback from the lecturer's perspective and postgraduate perspective.

McCann (2009) posits that the aptitude and willingness of students to act on the feedback depends on the expressive impact of feedback. McCann (2009) further adds that feedback should motivate and inform students how well they have performed and how to improve their future performance. This study was conducted in England, at the University of Lincoln and focused on students' perceptions on how they both receive and respond to the assessment feedback. McCann posits that feedback should be viewed as feed-forward; that students and lecturers should use feedback in a way that informs what needs to be done to improve (McCann, 2009).

(Sadler, 2010) argues that giving students detailed feedback about their strengths and weaknesses is vital in higher education. The study was conducted at the University of Griffith in Australia and aimed to increase the effectiveness of feedback in the learning environment. Sadler (2010) argued that feedback serves the purpose of improving effective learning because it plays a vital role in shaping learning manners. It is therefore, suggested that feedback should include different elements (Sadler, 2010). This includes the mark which represents the work of a student, comprehensive explanation of a mark. The participants of this study were teachers from the University of Griffith, Australia.

From the researcher's view of the literature concerning the purpose of feedback in higher education, no much research has been conducted on the purpose of feedback in higher education. Therefore, this suggests there should be numerous studies on the purpose of feedback in order to empower lecturers to deliver effective feedback to their students. Moreover, this may encourage universities to explore methods that can maximise students' engagement with feedback (Can, 2014). In addition, this might limit the dissatisfaction that students express regarding academic feedback and challenges that lecturers experience when preparing and delivering feedback to students.

2.6 Challenges to the provision of feedback in higher education

While the role of feedback is acknowledged, students express dissatisfaction with the feedback they receive (Mulliner, 2017). In contrast lecturers feel they provide quality and detailed feedback (Mulliner, 2017).

Previous researchers have identified several challenges concerning feedback in higher education. For instance, Spiller (2009) identified several challenges to the provision of feedback in higher education. The first challenge is that students are not given a proper guidance on how to use

feedback to advance their performance. Cochrane (2008) further argued that in order to gain deeper understanding of the students' perspective, it is vital to take note of their opinions on assessment feedback. The same author argued that students sometimes seem to lack motivation and understanding on how to use feedback because of a lack of proper guidance. According to McCann (2009), students need some instruction and clear guidance in navigating the rules of using feedback. Hoon (2015) added that feedback has different needs, therefore, a lack of guidance on policy results in feedback that is inappropriate for students' use.

The second challenge is that students have little to do with feedback provided, due to the fact that the language used does not make sense (Spiller, 2009). Additionally, they are not trained to engage with feedback; If they are to do so, higher education institutions need to explore methods that will maximise engagement with feedback (Scot, 2014). Furthermore, institutions should explore teaching and learning methods that can develop students' ability in dealing with feedback independently (de Bruin, 2015).

According to (Scot, 2014), reports about the dissatisfaction of feedback by students are not with the amount of feedback they receive or a lack of engagement with feedback, but with the time it arrives. Students complain about feedback that is not timely. Furthermore, Scot (2014) says immediately and frequent feedback from lecturers contributes to students' development. Focusing on assisting students to gain access to timely feedback has been acknowledged as one of the most important things that institutions can do for their students (Kay, 2016). However, student experience of feedback is far from positive and the dissatisfaction of feedback has been reported in most higher education institutions (Kay, 2016). Moreover, Cochrane (2008) highlighted that it is too risky when students do not receive feedback fast enough, because it is highly possible for students to move on to new content and feedback turns out to be inappropriate to their on-going learning. Therefore, this suggests that students should receive feedback fast enough.

Finally, while the focus is on encouraging lecturers to give feedback timely, students seem to pay more attention to feedback attached to a good mark (McCann, 2009). According to Williams (2009), students assume that feedback with a good mark is more positive and if the mark achieved is not good is seems negative. Furthermore, Williams (2009) added that the mark allocation to students' assessment tasks should indicate progress. If not, students will have no way of knowing how well or badly they have performed. In order for students to gain new understanding of how they have performed, high-quality and effective feedback should guide students through their learning process rather than communicating facts about one particular piece of work (Kay, 2016).

The review of the literature in this section has revealed that students across the higher education report dissatisfaction with the feedback they receive. While students report dissatisfaction regarding feedback, it was also evident that there is little research investigating the challenges that both lecturers and students experience during the provision of feedback. This suggests numerous studies that could address the challenges that obstruct lecturers and students from engaging with feedback effectively.

2.7 A review of studies on assessment feedback

2.7.1 International

Several studies on assessment feedback have been conducted with a focus on the perceptions of students and the improvement to teaching performance. Cochrane (2008) conducted a study in United Kingdom in the University of Glasgow Caledonian with the aim of capturing and interpreting the students' perspective of the written assessment feedback. The data of this study was collected from the registered nurses and non-traditional entrants to higher education. The participants were purposively selected to offer information about the phenomenon being investigated. This was a qualitative study which followed a naturalistic paradigm. The paradigm was used to capture and interpret the student perspective of written assessment feedback (Cochrane, 2008). The same author further argued that the paradigm used enabled a greater understanding of feedback from the students' point of view. The focused-group interviews were used to facilitate the collection of data. Cochrane (2008) believes that focus-group interviews encourage interaction between participants and enhances quality of data. The findings of this study revealed that there is a misconception concerning the purpose of written assessment feedback both from lecturers and students' perspectives. The author further added that the use of feedback as a transmission process on justifying a mark rather than encouraging learning does not help students' learning. The author concluded by indicating that to enhance the culture of learning, the first approach to consider is feed-forward. Another perspective study of feedback was conducted by McCann (2009) in England at the university of Lincoln; the study focused on students' perceptions on how they both receive and respond to the assessment feedback. In addition, the study aimed to explore level two and three students' perceptions of assessment feedback within the Department of Policy studies, and to determine how students in that department were receiving and using feedback. Apart from the abovementioned, the interest of this study was to find out whether students were using feedback to feed-forward. The participants of this study were academic staff and level two and three students. There were also six members of the academic staff, 465 level two and three students. Twenty-five level 2 students were used in the

focus-group interviews. The findings of the study revealed that, both assessment and assessment feedback play a fundamental role in underpinning student learning in higher education. Students were also found to pay more attention to the feedback attached to a good mark because they expected it to be more positive.

The data collection methods for the current study were questionnaires and focus-group interviews, while McCann only used focus-group interviews as his method for data collection. Therefore, the current study is different because of the methods of data collection employed in comparison to the previously mentioned studies.

While the abovementioned studies focused on students' perspectives, some were exploratory. In the United Kingdom at the King's College, an exploratory study was conducted by Hatzipanagos (2009) focusing on the relationship between formative assessment and social software. This study further explored how the new tools of technologies could best support to encourage effective approaches that both empower and enhance the learning experience. Hatzipanagos (2009) identified several characteristics in the provision of feedback. The first characteristic is that students' feedback should empower students to manage their own learning. Once students manage their own learning, their levels of confidence will improve and the responsibility will also increase (Hatzipanagos, 2009).

Beaumont et al. (2011) also explored the perceptions of student teachers in the University Of Edge Hill. This study focused on the experiences of student teachers concerning the quality of feedback. This was a qualitative study of 23 staff and 145 students in six schools and three English universities across disciplines. Beaumont et al. (2011) used semi-structured focus-groups and questionnaires to collect data for the study. This is similar to the current study because questionnaires and focus-group interviews were also used. The sample selected from the Beaumont et al. study consisted of teachers, first-year undergraduates and tutors. This study is also similar to the current study, since it consisted a sample of preservice teachers. The abovementioned participants were all interviewed during the study. The findings of Beaumont et al. (2011) revealed that student teachers experienced a dissimilar culture of feedback in higher education, because at the high school level, guidance was provided concerning the use and interpretation of the feedback. It was evident that 60% of the participants felt that they needed more support in using and interpreting the feedback. This suggests different approaches to engage students during the provision of feedback. The findings of this study revealed that student teachers' perceptions concerning feedback is that, it is the constituent of a dialogue guidance process rather than a summative occurrence. Therefore, according to the findings of the study, the issue of the quality of feedback remains a huge concern for higher education institutions. It

stands to conclude that the quality of feedback has received the lowermost satisfaction. According to Beaumont et al. (2011) feedback should provide opportunities which pinpoint the areas of improvement. However, it is Beaumont et al. (2011) view that feedback is not about summative judgement of students' performance, but as a system of guidance.

In Turkey, at the University of Dokuz Eylul, a similar study was conducted by Akkuzu (2014), which explored the role of feedback based on self-efficacy belief sources in the reciprocal interaction of the teaching performance and self-efficacy beliefs. The instruments used to collect data were semi-structured interviews and observation. This distinguishes the current study from Akkuzu (2014), since questionnaires and the focus-group interviews were used to collect data. As an exploration study, 26 student-teachers were drawn via purposive sampling to participate in the study. The participants were taking a teaching practice course in a chemistry teacher program at the University of Dokuz Eylul in Turkey. In this study a case was employed to provide a rich accumulation of data. The findings of this study were that different types of feedback based on self-efficacy belief sources directly affected the student teachers' self-efficacy beliefs and teaching performance. The same author also found that different types of feedback provided key paths for student teachers to better understand their own developing teaching performance and that of other teachers. A later study was conducted by Can (2014) in the United Kingdom, at the University of Leicester. This study aimed to explore methods to produce and deliver audio feedback to a range of students engaged in a variety of academic tasks with the aim of maximising student engagement, while working towards a framework which increase the use of audio feedback by teaching staff. Ethical approval for this study was obtained from the University of Leicester before commencement of the study. Similarly, the Ethical approval of the current study was obtained from the University of KwaZulu-Natal. The researcher found that the use of audio feedback is popular with the majority of students and has potential to save staff time, particularly when a substantial amount of feedback is given. Another exploratory study conducted by Ajjawi (2017) aimed to explore feedback as a dialogical process focusing on effects, through presenting an innovative methodological approach to analyse feedback. The aim of this study is contrary to my research because I wanted to explore how biological sciences preservice teachers use assessment feedback to enhance learning of their biological sciences modules. The finding of this study was that feedback comments that are badly timed become unhelpful and do not address what the students want to address.

Mulliner (2017) in their study conducted in Liverpool, at the University of John Moores found that staff and students appear to hold fairly similar views with a statically significant difference in opinions found in relation to only one form of feedback. This study explored and compared the

perceptions of student and academics regarding feedback practice. This study has adopted a quantitative approach in the form of questionnaire surveys, conducted with both students and academic staff at the school of the Built environment in Liverpool, at the University of John Moores. The participants of this study were both academic staff and undergraduate students. There were 26 academic staff and 194 undergraduate students who participated in this study. The findings revealed that the staff and students thought that face-to-face feedback is an effective feedback.

In this section, some of the studies investigated the effect of feedback in students' learning. In the United States of America, at the Western Kentucky University, Butterfield (2014) investigated student preferences for both face-to-face and online teaching. The participants of this study were undergraduate students from a mix of freshman, junior and senior level courses. An open-ended questionnaire was administered to the participants, as well as an open response approach to allow broad insight into students' responses without bias or limiting feedback. The participants of the current study were also undergraduate but used two data generation methods: a questionnaire and focus group interviews. They found that the most positive impact with face-to-face learning is interaction through class discussions, group projects and other types of active learning. The findings further indicated that the most positive impact with online experiences is the class structure that supports flexibility in organisation and clear expectations.

A similar study was conducted by McNell (2015) at the University of Southern Denmark. The aim of this study was to investigate the impact paper-based, and electronic methods of assignments submissions and return have on students' and markers' perceived quality of feedback. During this study, students and markers on an undergraduate course were asked to complete an anonymous online survey investigating their perceptions of quality, format and timeliness of feedback delivered electronically and on paper. The data for this study were collected from a class of 335 students enrolled in a first-year Population Health course at the University of Auckland. Data were collected by means of student questionnaires which were developed based on three areas of interest. The first was the quality of feedback; the second area of interest was the format of the feedback, as well as location and format of the comments. Both questionnaires had the same questions relating to their respective assignments. The current study also used questionnaires; however, unlike McNell (2015) study, two instruments two instruments were used to collect data: questionnaires and the focus-group interviews. The findings of McNell's study revealed that electronic marking was found to be an acceptable method of delivery of feedback on written assignments by both students and markers. The findings of this study also suggested that electronic marking can result in timely feedback for students.

In the United States of America at the University of Nebraska, Seldin (1997) conducted a study. The study aimed to improve teaching performance. Furthermore, the focus was on providing rationale and equitable basis for personnel decisions. Lastly, the study identified the key challenges in delivering and receiving feedback in the aforementioned institution. The participants of this study were university students. Questionnaires and structured-interviews were used to collect data and the findings revealed that student feedback on teaching will never be a panacea for all of the ailments of higher education, but it can heighten instructional effectiveness, thereby improving the quality of education.

An intervention study was conducted by Hattie and Timperley (2007) in which they analysed the meaning of feedback and synthesised the evidence related to the power of feedback to improve teaching and learning at the University of Auckland in New Zealand. On the other hand, the study also proposed a model of feedback that is used to identify the circumstances under which feedback has the greatest impact. The findings revealed that providing written comments is more effective than providing grades. This simply implies that feedback is more important than the mark allocated. Hattie and Timperley (2007) further suggested that feedback should be clear and timely. Providing and receiving feedback requires much skill by students and lecturers.

Spiller (2009) conducted a study on assessment feedback at Waikato University in New Zealand. This study focused on the challenges of assessment feedback and suggested the solutions to the challenges revealed in New Zealand. In this study, Spiller discussed at what time in the learning process feedback would be effective. This is pivotal in helping lecturers to know when and how to provide feedback to students. Spiller (2009), also asserted that feedback must be provided soon to students. The findings revealed that feedback is a vital aspect of teaching and learning, but lecturers and students experience challenges during the implementation of the process. Spiller (2009) also found out that feedback fails to support students, because they complain that the feedback is not clear.

A later study was conducted by Sargeant, Mann, Van der Vleuten, and Metsemakers (2009) on assessment feedback at the University of Dalhousie in Canada. The aim of the study was to facilitate students' feedback using reflections. The participants of the study were a group of twenty physicians. They found out that receiving feedback inconsistent with self-perception stimulates extended reflection. Sargeant et al. (2009) further argued that facilitation of feedback and reflection could enhance assimilation, acceptance and use. Prior to that, Sargeant et al. (2009) conducted a pilot study

which involved 144 family physicians. Purposive sampling was used to recruit the participants of the study. In relation to the current study, both studies are similar since they used purposive sampling.

Smallbone (2010) also emphasised the approach which is feed-forward in the study that was conducted in the Oxford Brookes University. The purpose of the study was to outline how lecturers in a university context may use reflection on written feedback formatively. The study further reported on the use of a simple tool, self-copying sheet given to management undergraduates on the return of coursework, which engages students and captures their reflection on their feedback. The participants of the study were second-year and third-year students from the University of Oxford Brookes. The findings revealed that students were enthusiastic about a tool for their reflection on paper. Smallbone (2010) said that not all the students found it easy to identify future actions based on their written feedback. Therefore, this limits students from feeding-forward.

In Scotland, at the University of Strathclyde, Brestlin (2014) conducted a study to identify the different learning benefits resulting from receiving feedback reviews from peers, and from producing feedback views for peers. The study consisted of semi-structured and focus-group interviews. This is in contrast to the current study which employed questionnaires and the focus-group interviews. Brestlin's study used 82 participants from the engineering design class at the University of Strathclyde. The study found out that students were generally positive about their experiences of engaging in peer review. The findings of this study are contrary to the current study which focused on how Biological Sciences preservice teachers use feedback and why they use it in a specific way.

In the United Kingdom, at the Scottish Agricultural College, Maggs (2014) conducted a study in the Life Sciences teaching group which assessed how satisfied staff and students are with feedback, the methods of feedback use and whether students are engaging with the feedback they get. The instruments used to collect staff and student perceptions of feedback were questionnaires. The descriptive statistics were used to analyse the data of this study. Maggs (2014) used a case study to assess staff and students of the Scottish Agricultural College. In contrast, the current study used a qualitative case study of Biological Sciences preservice teachers which employed two data generation methods: questionnaires and the focus-group interviews. The findings of Maggs' study revealed that higher education institutions can make considerable improvements to its feedback practice, which could improve the learning experience of its students. These findings contrast with those of the current study which revealed that the Biological Sciences preservice teachers understand feedback as a report to students' assessment-tasks, as a mark of students' assessment-tasks, performance of students and the reflection on the assessment-tasks. Hence, it was also evident that

the Biological Sciences preservice teachers received feedback such as written feedback, oral feedback and electronic feedback.

A later qualitative study was conducted by O'Donovan (2016) in the United Kingdom, at the University of Oxford Brookes. The aim of their study was to use a model of the assessment process cycle to frame understandings drawn from the literature and argue that the problem with much current practice resides largely in a failure to effectively engage students with feedback. The study goes on to explore how best to effectively engage students with feedback, with evidenced examples that have successfully overcome this problem. This was a qualitative study which used the interpretive paradigm. This study is similar to the current research because both studies are qualitative and used interpretive paradigm. O'Donovan's study revealed that the dilemma of the disjuncture between theory and practice has been increasingly highlighted in most of the higher education institutions. They also found out that feedback is potentially the most powerful and important part of the assessment cycle when it comes to improving further student learning.

Dunworth (2016) found that it is possible for students to avoid negative emotions from feedback by controlling the manner in which the feedback was presented. Thus, this could be achieved by highlighting the strengths at the end of feedback comments. The researchers aimed to report on the results of embedded multiple case studies that investigated the views of both lecturers and students on written staff-student feedback in three postgraduate programmes of the United Kingdom University. This study took the form of an embedded multiple-case design that comprises case-studies within a single institution. The participants of the study were experienced lecturers who were experts in the field. The student participants were taught by the staff members.

While lecturers and students think that face-to-face feedback is effective, researchers raised a number of issues concerning feedback in higher education. Firstly, researchers raised that student experience of feedback remains far from positive because the institutional approaches to feedback still seem to be lagging behind the curve (Kay, 2016). Secondly, researchers also raised that students complain that feedback comments are badly timed, unhelpful and do not address what they want to address. Thirdly, it was raised that there is a lack of work addressing feedback from lecturers' perspective and postgraduate perspective. Finally, there is a little research investigating the impact the format of feedback has on its quality and subsequently on student learning (McNeill, 2015).

2.7.2 Local

Related studies on assessment feedback have also been carried out in the South African context. For example, Lombard (2011) explored the value of rubrics for promoting student engagement in the

assessment and feedback processes by means of a conceptual analysis. This study was conducted at a South African University. The study further focused on suggesting some areas in which applied research could be a tangible value of rubrics for promoting students' engagement in the assessment and feedback processes in the South African universities. Furthermore, the purpose of the study was to improve students' performance by enhancing their quality of learning. Regarding the abovementioned, Lombard (2011) reasons that assessment feedback should deliver high quality information to students about their learning. In this study, it was evident that feedback is a key factor which determines the learning achievement of students. Though, the learning environment is not always conducive for feedback to take place. Furthermore, it was found that the use of rubrics and its effects to promote student engagement in the assessment and feedback processes was well explored. Lastly, the conceptual clarification of feedback and practices of feedback were discussed. In the same view, the strategies that could be used to improve students' performance through feedback were suggested.

In the South African context, Mutekwe (2014) conducted a study on feedback in the faculty of Human Sciences, at Vaal University of Technology. The aim of this study was to examine the effects of the feedback given to students by lecturers as learning support. The data of this study was collected through a cross-sectional feedback survey using focus-group interviews which contrast with the current study, that used questionnaires and the focus-group interviews. The participants of this study were Bachelor of Education preservice students which is similar to the current study that also involved preservice teachers. The study found that student feedback needs to be culturally responsive for it to foster metacognition to students. The study also found that lecturers should provide feedback that is simple, meaningful and clearly focused, so that students will focus more on the role of feedback than the marks obtained.

A similar study on students' perspectives of feedback was conducted by Bansilal (2015). This was an exploratory study of the assessment and feedback practices in a practical teaching intervention for in-service teachers. The aim of this study was to explore the nature of feedback reports that were provided and to assess the value of allocating assessment scores to educators. This was a qualitative study conducted using a naturalistic inquiry approach. The study used an interpretive paradigm similar to the current study. The data was collected from 249 participants, whereby 98 participants were teaching Mathematics and 151 were Science teachers. This sample is relatively larger than that used in the current study of 30 participants, of which 30 completed the questionnaires and 20 who were purposively selected to participate in the focus-group interviews. The findings of the study revealed that the written comments covered a range of issues related to teacher professional

development. It was also found that the scores lay within a narrow range and did not work well in differentiating between ranges of competencies.

Beets (2007) conducted a study in the University of Stellenbosch to re-introduce ideas focused on supporting quality learning and teaching in Geography. The above was achieved through the utility of three recent publications on the state of geography in higher education in South Africa. Interestingly, Beets found that feedback is more effective in improving learning outcomes when it is about the substance of the work and not superficial aspects. Furthermore, he found that feedback can assist learning if it encompasses both evoking of evidence and a response to that evidence by using it to improve learning.

A later study on students' perspectives of feedback was conducted by Chokwe (2015). The aim of this study was to report on the results of a major study on academic writing of first year English second Language University students in an open and distance learning context. The data of this study was collected through document analysis, interviews and the questionnaires. This was qualitative in nature and used case study as a design. The participants of the study were University tutors and students. The study found that feedback provided to students is not always sufficient and therefore denies students opportunities to learn effectively as they would not know their weak and strong points.

Quinn (2015) also carried out a study on assessment feedback. This study aimed to illustrate a range of assessment practices and principles. This study aimed to encourage lecturers to reflect critically on their current assessment practices, as well as engage with some of the literature and research on assessment in higher education. Rhodes' lecturers were the participants of this study. The findings of the study were that lecturers highlighted that students are concerned with the marks assigned to the assignment and ignore the feedback given. According to Quinn (2015), the participants further said that feedback is the basic principle of learning. Feedback enhances students' understanding of what they are trying to achieve and how close they come to that goal. This is a wakeup call for higher education lecturers to consider feedback in preparing students for the future. Another finding was that assessment can be truly formative and contribute to students' learning when quality feedback is delivered.

The review of literature, including a review of both international and local studies at the University of KwaZulu-Natal showed that even more research has been carried out on students and lecturers' perceptions. The findings are still different, indicating a need to carry out further studies in this area. It is also evident that there have been no studies on feedback carried out in Biological Sciences in

South Africa. The numerous studies reviewed above focused on feedback in higher education, but none of the studies focused on the feedback of Biological Sciences preservice teachers. Therefore, the current study was different considering the contexts in which the above mentioned studies were conducted and the participants of the studies. The studies reviewed above on feedback indicate that the research has been conducted internationally and locally, but few studies were conducted in the South African context.

In addition, the current study may not be relevant to other contexts because it was conducted in a developing country, which does not have the same facilities as the developed countries mentioned above. This study was different to other studies and it explores new ideas and knowledge regarding the role of feedback in higher education.

2.8 Conceptual framework

In exploring Biological Sciences preservice teachers' sense-making of assessment feedback, this study was informed by a conceptual framework which was adapted from Handley, Lawrence, Millar, Price and Szwelnk (2007).

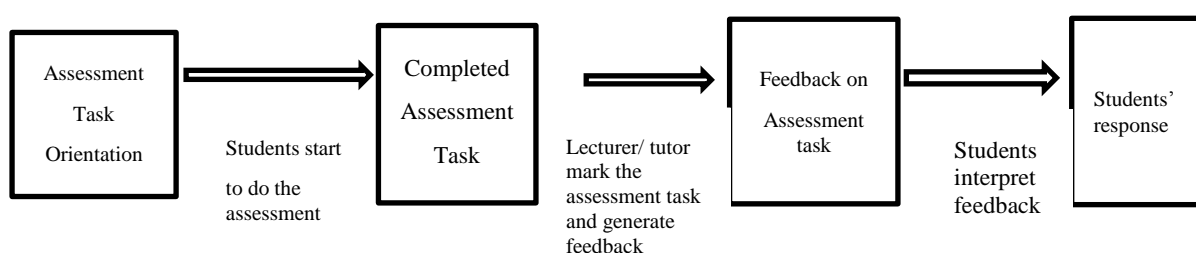


Figure 1: The assessment feedback sequence

The conceptual framework of this study was adapted from '*when less is more: students' experiences of assessment feedback*'. The conceptual framework's assumptions that reinforced this study are the ideas of Handley, Szwelnikb, Ujmac, Lawrence, Millard and Pricee.

The conceptual framework was adapted in order to guide the current study. It is assumed that the conceptual framework will determine how Biological Sciences preservice teachers interact with their lecturers through assessment feedback. The conceptual framework guided the researcher in interpreting the data.

Initially, the original diagram had an assessment brief in the first box, completed assignment in the second box and feedback on assignment in the third box. The researcher replaced the first box with assessment tasks orientation because the focus of the current study is not only restricted to

assignments, but it focuses on various assessment tasks. The current study focuses on the assessment tasks such as projects, practical activities, controlled tests and assignments of Biological Sciences preservice teachers. The researcher also replaced the second box and the third box with completed assessment task, feedback on assessment task and students' response.

In the original diagram, the researchers developed a conceptual framework in figures 1 to 3. Figure 1 presented the three artefacts that are central to most feedback methods. The artefacts of figure 1 are as follows: assignment brief, completed assignment and feedback on assignment. The aim to develop this study was to highlight the specific areas of interest. Furthermore, the researchers used this conceptual framework to highlight how both students and lecturers or a staff engages through feedback. In figure 2 of the conceptual framework, the researchers added the interaction of staff and students. The interaction was added to portray a traditional assessment or feedback method whether the lecturer writes his or her feedback, which is then by the students independently. In figure 3, structural and procession elements to assessment/feedback were developed. This was done to show that the members of staff writing the assignment brief may not be the person who marks the final assignment. According to Handley (2007), before the lecturer begins to write an assignment brief he/she is influenced by the contextual factors such as the traditions of the academic discipline. These researchers indicated that students are influenced by contextual factors in different ways. Furthermore, the researchers used this conceptual framework showing that any assessment/feedback episode has a response outcome for both students and the staff.

The conceptual framework gives an outline of the sequence of events from assigning work, assessing students' work, give feedback and how students respond to the feedback. The conceptual framework was used to design the data generation instruments and interpret the data.

2.9 Chapter summary

In this chapter, the review of the literature was presented. The presentation of the literature focused on the meaning of assessment, types of assessment feedback and purposes, definitions of assessment feedback, the challenges to provision of the feedback, an outline of both international and local studies and the conceptual framework that assisted in making sense of the findings of this study. In this chapter, the researcher reviewed the meaning of assessment. Assessment was defined as the measure of students' progress, which allows them to shape their learning. The types of feedback highlighted included oral feedback, written feedback, electronic feedback, assessment task feedback, process feedback and self-regulation feedback. The types of feedback that were appropriate for this

study included oral feedback, written feedback and electronic feedback. The assessment feedback was defined in this chapter as information about the performance of a thing or a person. The purposes and the challenges of feedback in higher education were discussed in detail and literature revealed that the challenge is that students are not given a proper guidance as to how to use the feedback to advance their performance. Another point noted was that the purpose of feedback is to offer students with the information to feed-forward into their future piece of work. The chapter concluded with the review of studies on both international and local as well as the conceptual framework which guided the study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

In the previous chapter, the review of the literature on the assessment feedback was conducted. The review focused on the meaning of assessment, types of assessment feedback and purposes, definitions of assessment feedback, the challenges to provision of feedback, an outline of both international and local studies and the conceptual framework that will assist in making sense of the findings of this study. The conceptual framework was also presented in the previous chapter.

In this chapter, the focus is on the methodology that was employed during the study. Factors such as research design, research paradigm, data collection methods and sampling method will be fully discussed.

3.2 The research paradigm

Wahyuni (2012) defines paradigm as a set of fundamental assumptions and beliefs as to how the world is perceived. There are numerous research paradigms, namely positivism, post positivism, interpretivism or constructivism and pragmatism. This study adopted the interpretive paradigm with the aim of exploring how biological sciences preservice teachers use assessment feedback to enhance learning of their biological sciences modules. According to the interpretive paradigm reality is constructed by social actors and the people's perceptions (Wahyuni, 2012). In this study, Biological Sciences' preservice teachers were the social actors and their perceptions with regard to the assessment feedback were analysed. Wahyuni further argued that the interpretivist should consider the characters with their backgrounds, assumptions and the experiences that contribute to the construction of the reality existing in their social constructs.

During this study, the assumptions and backgrounds of the participants were considered since the participants came from different social backgrounds. In addition, their assumptions regarding assessment feedback contributed to this study. Strydom (2005) believes that the uses of interpretive approach in the research help the researcher to understand social phenomena and the meanings that people confer to their livelihoods. Interpretive paradigm enabled the understanding of how the study participants interact with assessment feedback from their lecturers. It also helped in appreciating the biasness of the data that was generated.

The application of the interpretive paradigm in the study enables the researcher to make an interpretation of what is seen, heard and understood (Creswell, 2009). The use of the interpretive paradigm in this research empowered the researcher to explore the understandings of the participants regarding assessment-feedback. The aforementioned paradigm enabled the researcher to understand the types of feedback that the participants obtain from their lecturers, to understand how they use the feedback they get from their lecturers and also why participants use feedback the way they do. Wahyuni (2012) further argued that in the interpretive approach, the researcher is part of what is being researched. During the current study, the researcher had a central role to play in facilitating each process with the participants. This allowed for the interpretation of data without difficulties, since the researcher was part of the study.

According to Cohen, Manion and Morrison (2013), the interpretive paradigm allows the researcher to understand how the participants interpret the world around them. Yin (2014) further adds that, the central role in the interpretive approach is to have a greater understanding of the subjective world of the human experience. During this study, one of the researcher's responsibilities was to ask several questions based on assessment feedback with the aim of understanding how participants conceptualise assessment feedback in their learning. Questionnaires and focused group-interview were administered in order to obtain the aforementioned. The researcher interacted with the participants (Wahyuni, 2012). This was very crucial, since it enabled the researcher to have an opportunity to understand the societal livelihoods the study participants are attached to (Wahyuni, 2012).

3.3 Research Questions

The following research questions guided the study in terms of collecting the data that is relevant and which reflected the true reality of the study participants. The research questions further enabled the researcher to have a greater understanding of the conceptions of the participants regarding assessment feedback.

1. What are the Biological Sciences preservice teachers' understandings of assessment feedback?
2. What type of feedback do Biological Sciences preservice teachers receive for their assessment tasks?
3. How do Biological Sciences preservice teachers use the feedback they get for their assessment tasks?

4. Why do Biological Sciences preservice teachers use assessment feedback the way they do?

3.4 Research Approach

According to Cresswell (2014) criteria for selecting a research approach is based on the research problem and questions, personal experiences and audience. Furthermore, Cresswell (2014) argues that research approaches are plans and procedures for research that distance the steps from general assumptions to detailed methods. For this reason, it informs the researcher about which approach to be used. In this study, a qualitative approach was employed. According to Mertens (2014) qualitative research is a situated activity that locates the researcher in the world. On the other hand, Cresswell (2014) further adds that qualitative is an approach for exploring and understanding the meaning individuals or groups assign to a social or human problem. Hence, the exploration and understanding the meaning of individuals involves emerging questions, data collection methods, participants and participants' setting, data analysis and general themes (Cresswell, 2014).

Qualitative study relies on textual and image data (Creswell, 2009). The current study explored how biological sciences preservice teachers use assessment feedback to enhance learning of their biological sciences modules; the duration of their learning is four years. The reason for adopting the qualitative approach in this study was to engage the participants in the exploration of the assessment feedback that they receive from their lecturers. The use of the qualitative approach in this study allowed for the identification of numerous factors such as values, cultural activities and personalities of the participants that shaped participants' interpretations of assessment feedback. This was further argued by Creswell (2009) when He expressed that in the qualitative study, a researcher is normally involved in the study and share some experiences with the participants. Furthermore, it is the responsibility of the researcher to have entry to a research study; he or she can be able to identify the themes in the study as well as create favourable or unfavourable conclusions regarding the study (Creswell, 2009). During this study, different themes were identified including reflection, strengths and weaknesses, results and the report. According to Creswell (2009), a qualitative research employs different methods of data collection, analysis and interpretation. The study employed two methods of data collection which were the questionnaires and the focus-group interviews. The use of qualitative approach in this study enabled generation of data that shows the true reflection of the participants as well as data which speaks to the research questions. This research approach also heightened the validity of the data.

The researcher not only selects an approach of a study, but also decides on the research design (Cresswell, 2014). The type of research design used by a researcher is determined by the purpose of

the study, the nature of the research question and the resources that are obtainable to the researcher (Rossman, 2011). The current study is a case study based on third-year biological sciences preservice teachers. According to Yin (2009) a case study is a way of conceptualising human behaviour. The study conceptualised the behaviour of the participants regarding the assessment feedback they receive from their lecturers. The behaviour of the participants was conceptualised through analysing the responses provided in the questionnaires as well as in the focus-group interviews. Yin (2009) further added that a case study should reveal the actual evidence. This study reveals the type of assessment feedback biological sciences preservice teachers receive from their lecturers. This was achieved through interviewing and administering questionnaires to the participants who provided positive answers. Above all, the unit of analysis in this study was the year groups of biological sciences preservice teachers.

3.5 Research design

Rossman (2011) argued that the type of research design used by a researcher is determined by the purpose of the study, the nature of the research question and the resources that are obtainable to the researcher.

The research methodology employed in this study was qualitative. Through this methodology a case study approach was used. The case study was based on the Biological sciences preservice teachers who were taking Biological sciences for educators 410 at a South African University.

According to Yin (2009) a case study is a way of conceptualising human behaviour. During this study, the researcher was able to conceptualise the behaviour of the participants by analysing their responses provided in the questionnaires as well as in the interviews.

Yin (2014) further argues that when using a case study research, a researcher must work hard to report all evidence fairly. The evidence obtained during this study was fairly reported. A research case study may be both single and multiple- case studies. The current research employed a single-case study of biological sciences preservice teachers at a South African University.

The analysis of the participants' responses in both questionnaires and focus-group interviews further revealed how biological sciences preservice teachers use the assessment feedback from their lecturers. Thus, the unit of analysis in this study was the year groups of biological sciences preservice teachers. However, the study focused on the third-year students who are biological sciences for educators 410.

Cohen, Manion, and Morrison (2013) endorse that the case-study reports investigate real-life situations such as human relations, societal issues and social cohesion. Similarly, Yin (2009) argued that the case-study enables the researcher to plan and structure the research process. This was evident in the current study. Each biological science preservice teacher was regarded as a source because their responses added value to the data of this study. The case-study was employed to obtain a greater understanding of the type of assessment feedback that preservice teachers obtain from their lecturers.

3.6 The participants

This study was conducted in one of the Universities in South Africa, in the province of KwaZulu-Natal. This institution was selected since the researcher is a student; therefore, it was easy to approach the participants. In this institution, there are undergraduate preservice teachers and postgraduate teachers.

The participants that had completed Biological Sciences modules such as Biological Sciences for Educators 210, 220, 310 and 320. Therefore, the expectation was that the participants had a good understanding and significant experiences of tertiary level assessment-feedback. Furthermore, at this level of their studying, the Biological Sciences preservice teachers should have better understanding of assessment feedback, since this module is an exit module. Again, most participants that participated in this study reside in the residences of the university.

Purposive sampling was used to select the participants of the study. The researcher purposively selected Biological Sciences preservice teachers who were doing Biological Sciences 410. Firstly, the participants were approached by the researcher who informed them of the purpose of the study. 30 Biological Sciences preservice teachers volunteered to participate in the study initially and they all completed the questionnaire. Only 20 of the 30 were available for the focus group interviews. The 20 participants were divided into four group of five with a view to effectively manage the focus group interviews.

3.7 Methods of data collection

In this study, data was collected using a questionnaire and focus-group interviews. The questionnaires were the first tool to be administered. In fact, the questionnaire was a precursor to the focus group interviews.

3.7.1 Questionnaires

According to (Cohen et al., 2013) questionnaires are extensively used for gathering survey information. In this study, the questionnaire was administered as the first tool to collect data about biological sciences preservice teachers' understandings of assessment feedback and how they use it in their learning of biological sciences' modules. The questionnaire consisted of two parts: Part A of the questionnaire had the biographic information, while part B engaged the participants with feedback questions.

During the collection of data, 30 questionnaires were completed and returned by the participants. The participants selected for focus group interviews were those who provided answers that were relevant to assessment feedback. Cohen et al. (2013) believes that the quality of the research is not solely influenced by the appropriateness methodology and instrumentation, but also by the suitability of the sampling strategy employed. Cohen et al. (2013) further added that elements such as time and accessibility prevent researchers from obtaining valuable information from the participants. It is, therefore, vital to select the participants that would be easily accessible during the study. In addition, it is worthwhile to select participants that could have adequate time for the study. During this study, the participants were accessible, and they dedicated sufficient time to participate in the study. The aforementioned was due to the fact that the location of the study was within the premises of the university. Apart from the previously mentioned factors, researchers should frequently try to obtain data from a smaller group so that the collected data shows the true reflection of the participants (Cohen et al., 2013).

3.7.2 Focus-group interviews

The second data collection method that was used in this study was focus-group interviews. Focus-group interviews were conducted after the distribution of questionnaires in the current study. Strydom (2005) expressed that focus-group interviews are a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive and non-threatening environment. Therefore, during this study, the researcher facilitated the discussion with the participants by using planned questions. The aim was to obtain their perceptions of assessment feedback. Strydom (2005) further argued that focus group-interviews are conducted to have a better understanding of how people think or think about any matter.

Focus-group interviews were administered to understand how Biological Sciences preservice teachers feel or think about the feedback provided by their lecturers.

Rossman (2011) argued that focus-group interviews enable the researcher to identify the trends in the perceptions and opinions expressed by the participants. Therefore, the use of focus-group interviews assisted the researcher in this study to identify the trends in the perceptions and opinions of Biological Sciences preservice teachers regarding assessment feedback. The participants conceptualised feedback as the report, results, reflection as well as the performance of an individual. During a focus-group interview a researcher creates a supportive environment, asks focus questions to encourage discussion and the expression of different opinions (Rossman, 2011). During this study, the researcher identified the trends in the perception and opinions of the participants regarding the researched phenomenon. The assumption of the above-mentioned method was that beliefs and attitudes of personalities are not formed in a vacuum, but are socially constructed (Rossman, 2011). The researcher asked numerous questions that stimulated the study participants to provide data that reflected the facts of the phenomenon, which was assessment feedback.

Each focus group interview lasted a maximum of thirty minutes in order to avoid exhaustion and boredom. Twenty pre-service teachers took part in the focus group interviews based on their availability.

3.8 Ethical issues

The ethical issues were considered when conducting the current study. Permission to conduct the research was requested by the researcher from the university. The researcher considered various factors, before embarking on the data collection process during this study. Firstly, each participant signed a consent form. Secondly, all the participants were made aware that their participation was voluntary and that they could withdraw at any time. This assisted them to make an informed decision to participate voluntarily in the research. The real names of the participants were not used, each participant was given a pseudonym (Cohen et al., 2013). This was vital in ensuring that the confidentiality and the anonymity of the participants were protected. The female pseudonyms created during this study were, Vilonia, Happiness, Sandra, Pink, Alima, Portia, Ladyfair, Evidence, Moregirl, Cela, Nobuhle, Londy, Mia, Charmaine, Hlophe, Evangeline and Precious. The male pseudonyms were, Brian, Obrie, Selby, Mshayi, Jeffrey, Protas, Wiseman, Phila, Sam, Viera, Bobo, Maphoswa and Gift. The pseudonyms for the university were the University of Drakensberg.

3.9 Data analysis

According to (Mertens, 2014) the first step in the process of data analysis involves the data organisation and preparation of data. Creswell (2009) further posits that the last step in data analysis

is the interpretation. During the process of data analysis, the researcher gathers the information with the aim of extracting the valuable information and making possible conclusions. Data analysis plays a role in ensuring that the collected data is structured and meaningful (Creswell,2009). The data that was collected by the researcher through questionnaires and focus-group interviews was sorted through deductive and inductive reasoning. The data collected was organised, prepared and arranged. The last step was the interpretation of data which enabled the researcher to extract the findings guided by the research questions and the theoretical framework of the study. This then further enabled the researcher to identify the concepts that have emerged from the data.

3.10 Validity

Mertens (2014) defines validity as the process of using the data as evidence to warrant claims. Cohen et al. (2013) further argued that validity replaces doubts with confidence. In order to ensure the validity of this study, the researcher designed the instruments for data collection which were a questionnaire and focus-group interview schedule. The data collection instruments were checked and edited by the supervisor. This occurred before the collection of data. The use of validated questionnaires and the focus-group interview schedule reduced the challenges concerning the credibility of this study. Furthermore, triangulation was used where more than one instrument of data collection was administered (Cohen et al., 2013). The data received during this study through questionnaires was checked against the evidence attained from the focus-group interviews.

3.11 Trustworthiness

The trustworthiness of a qualitative study is made up of concepts such as credibility, transferability, dependability and conformability. Credibility is when the researcher checks whether the findings reflect the reality and the experiences of the participants (Creswell, 2009). One of the researcher's responsibilities during this study was to double check whether the findings reflect the reality and the experiences of the participants or not. During this process the researcher ensured that his values, attitude and opinions did not hinder the responses of the participants. The researcher also ensured that he was fully prepared before engaging with the participants.

After transcribing the focus-group interviews, the researcher asked participants to check the data that was collected. The aim was to ensure that the study is transparent and to enhance the trustworthiness of the study. During this process, the researcher ensured that his values, attitudes and opinion did not interfere in the data that was collected from the participants or influence the study. The study was shaped and influenced by the data that was collected from the participants.

Transferability in qualitative study refers to a detailed description of the methodology to enable interested researchers to use it in similar studies. The methodology of the current study was detailed discussed and described. It is therefore, anticipated that interested researchers can use it in their studies, which are similar to the current study. Conformability refers to the validation of the data analysis by someone else (Creswell, 2009). The same author further stated that it can be enhanced by making the research transparent to the participants and creating space for member checking of the data transcripts and final thesis draft. The study was also transparent to the participants.

3.12 Chapter summary

In this chapter, the researcher presented the research methodology and the design of the study. The research questions, the research paradigm, the size of the sample, and sampling procedure were also discussed. The analysis of the data and the methods of data collection of the study were also provided. In the next chapter, the findings of the research are presented.

CHAPTER 4

DATA PRESENTATION

4.1 Introduction

This study aimed to explore Biological Sciences preservice teachers' sense-making of assessment feedback at a South African University. The preceding chapter presented the research methodology which included the research approach, sampling procedures, methods of data collection and analysis. In this chapter, the data is divided into sections. The sections are as follows: understanding of assessment feedback; frequency of assessment tasks; turnaround time for assessment feedback; how assessment feedback is received; how preservice teachers prefer to get the assessment feedback; how preservice teachers use assessment feedback; usefulness of assessment feedback; and students' recommendations of the assessment feedback. This study had a total of 30 participants which included 13 male and 17 female who completed the questionnaire. Out of 30 participants, 20 were selected for focus-group interviews. The selection was due to the responses that the participants had provided in the questionnaire.

4.2 Understanding of Assessment feedback

4.2.1 Questionnaire data

The participants' frequencies of responses on understanding of assessment feedback were obtained during the collection of questionnaire data. Table 1 shows the different understandings of assessment feedback and their frequencies. This data was generated between July and October 2018.

Table 1

Participants' responses on understanding of assessment feedback

Understanding	Frequency
1. Report of the students' assessment tasks	05
2. Results of the students' assessment tasks	03
3. Performance of the students	03
4. Reflection on the assessment tasks	03

From Table 1, it can be concluded that majority of the preservice teachers conceptualised assessment feedback as a report of the students' assessment tasks. This salient aspect obtained a highest frequency than the other aspects. The other aspects include the results of the students' assessment tasks, performance of the students and the reflection on the assessment task.

4.2.2 Focus-group interviews data (FGDs)

The study had four focus-group interviews. Each focus-group interview was made up of five participants. During the data collection, the participants expressed their views regarding the assessment feedback. The researcher noted that the understanding of the preservice teachers regarding feedback is dissimilar.

During the first focus-group interviews, the researcher noted that the first group understands assessment feedback as the information about the students' assessment tasks. The group said that feedback in relation to assessment is whereby students receive the information for the assessment task that was given to students. The group further mentioned that feedback informs students about the mistakes they made in the assessment task. Therefore, this could be used as a guide so that students do not repeat the same mistakes in the upcoming assessment tasks.

Feedback in relation to the assessment is whereby you get the information about the assessment that you have done. Feedback in relation to assessment is something that you get after you have done maybe a certain assessment whereby you wanted to see that particular information is useful. (Focus-group interview 1)

During the second focus-group interviews, the Biological Sciences' preservice teachers said that they understand feedback as the process whereby the lecturer gives students the results of the assessment task. The participants further added that, during this process the lecturer can also corrects the students. This is captured in the following excerpt:

The feedback in relation to the assessment is where by the lecturer or a teacher is giving the information regarding the assessment of students. During this process, our lecturer corrects the mistakes that we have done as students. This usually takes place during the Biological Sciences 410 lectures. (Focus-group interviews 2)

During the third focus-group interviews, the researcher also asked the Biological Sciences' preservice teachers on the understanding of feedback in relation to the assessment. This group indicated that feedback informs the students about their performance in the assessment tasks and it informs them on how they can rectify the mistakes that the lecturer has highlighted.

According to our understanding, feedback is like the corrections of what you did wrong as a student, so that you cannot repeat the same mistake. It is when you are given a script, which tells you what went wrong. Feedback is the information that you receive from the lecturer on how you did and how can you rectify the errors. In fact, it is the information about how you have performed. (Focus-group interview 3)

In the fourth focus-group interviews, the Biological Sciences' preservice teachers stated that the feedback in relation to the assessment is the response that the students get from their lecturer once he/she has completed reviewing an assessment task. The assessment task can be practical work, a test, project, tutorial or an assignment. This was reflected in the excerpt below:

During the assessment-feedback the lecturer marks the assessment-task and gives the response students. Therefore, we can say that it is the response that we get from the lecturer or the teacher after you have been tested. According to my understanding, feedback is the response that you get from the lecturer for a certain thing. (Focus-group interview 4)

4.3 Importance of assessment feedback

4.3.1 Questionnaire data

In the previous chapter, the researcher mentioned that there were 30 participants that completed the questionnaires. Twenty-five indicated that the assessment feedback is important in their learning of the module. Firstly, the participants argued that the assessment feedback in the learning of the Biological Sciences for Educators 410 is important because it enhances their understanding of the module. Secondly, the participants added that the assessment feedback allows them to know their strengths and weaknesses. Five participants argued that the assessment feedback is not important in their learning of the Biological Sciences for educators 410. These were the words of one of the participants:

Feedback is very important, because it helps me to see how I need to improve on my content for the module. It is important to get the feedback for Biological Sciences for Educators 410; because it helps you to know which work needs to be revised (Selby, questionnaire)

4.3.2 Focus-group interviews (FGDS)

During the first focus-group interview, the researcher noted that all the participants agreed that assessment feedback is important in their learning of Biological Sciences for Educators 410. The participants indicated that it alerts them about their strengths and weaknesses. This group further

indicated that the assessment feedback they received played a huge role in enhancing their understanding of the content. It assisted the participants to identify the topics that required their additional effort. The participants further mentioned that assessment feedback helps them to understand what went wrong in the assessment task.

It is very important, because getting the assessment-feedback helps you to understand what went wrong in your assessment task. It helps you to know what you need to do in future, in order to make things right. It is very important, because I will know where I go wrong and correct my mistakes. It is very important to get the assessment-feedback as a student, because it helps me to see the things that I was doing, what are the things that I did wrong, what is my potential and where can I improve. (Focus-group interview 1)

The second focus-group mentioned that getting feedback is very important because it informs them about the mistakes that they made in the assessment task. The analysis of data has shown that the Biological Sciences' preservice teachers have no phobia for assessment feedback, because it provides the platform for students to identify the areas that need more of their attention. The assessment feedback also provided the platform for students to make progress in this module (Biological Sciences for Educators 410). Students' engagement with the assessment feedback enabled them to identify the shortcomings in their learning.

It is important to know where I have committed some mistakes, so that I can improve and close that particular gap. It is important, so that you can improve where you encountered the challenges. It's very important, because when you are doing the next assessment you can be able to correct the mistakes. It is very important, because as a student you learn from it. It prepares me for the upcoming task, so that I will not repeat the same mistakes. Therefore, after engaging with feedback I become ready for any assessment. (Focus-group interview 2)

During the third focus-group interview, the participants made it clear that they do not see the importance of assessment feedback in their learning. The preservice teachers indicated that assessment feedback is not important in their learning of the Biological Sciences for educators 410. They further argued that it is not important because it is not guaranteed that the next assessment tasks will have some questions that were also part of the previous assessment task. Therefore, the mistakes that the lecturer spotted in the previous assessment task may not help the preservice teachers to do well in their future assessment task, even if the student can try to correct some errors. In their words, they said that "the problem with feedback is that in this module, it is not guaranteed that it will come back in the future assessment-tasks, so it is not important" (Focus-group interview 3,

The fourth focus-group felt that the assessment feedback that they received in this module was very important in their learning. The preservice teachers have a positive attitude towards feedback, because they believe that it enhanced their understanding of the module. The preservice teachers further indicated that assessment feedback helped them to identify the gaps and shortcomings in their learning of this module (Biological Sciences for educators 410). They said:

It is highly important to get feedback in this module, because it addresses some misconceptions that you might have as a student. It also shows you where you need to improve. It is very important because since we are heading towards the exam, I want to see where I am lacking, and I am doing right. It is so important, so that I will be able to do better next time. (Focus-group interview 4)

4.4 Frequency of assessment tasks

4.4.1 Questionnaire data

The frequencies of assessment tasks based on the questionnaire data were obtained during the collection of data. These frequencies are presented in Table 2.

Table 2

Frequencies of assessment tasks based on the questionnaire data

Types of assessment	Once a week	Once a fortnight (2 weeks)	Once a month	Once a semester
Assignments	02	09	00	07
Practical work	23	02	04	01
Tutorials	08	02	03	09
Tests	00	01	20	04
Projects	00	09	03	12

From table 2, it is evident that the participants find it difficult to identify the types of the assessment tasks that they receive in Biological Sciences for Educators 410. The varying frequencies are perhaps an indication that the not all the participants knew the difference between the types of assessment feedback in this module. At this level of their study, the participants should have engaged with the different types of assessment tasks, hence should know the difference between the assessment tasks.

4.4.2 Focus-group interviews (FGDS)

During the interviews, it seemed that the Biological Sciences preservice teachers did not know the difference between the assessment tasks such as assignments, practical work, tutorials, tests and projects. This was confirmed by the researcher when the participants were asked when they receive the types of the assessment tasks in Biological Sciences for Educators 410. The responses of the participants have shown that they do not know the difference between the types of assessment tasks. The participants seemed confused during the collection of the focus-group interview data. For example, the participants confused assignments with projects.

According to the evidence related to the first focus-group interview, the participants receive assessment tasks such as assignments, tutorials, projects, practical work and tests. The responses of the participants indicate that they receive assessment tasks in the following form: assignments once a semester, tutorials once a week, projects once a semester, practical work once a week and tests twice per semester.

In this module, which is Biological Sciences for Educators 410, we do assessment tasks such as practical work, projects, tests, assignments and tutorials. We receive assignments once a semester, tutorials once a week, projects once a semester, practical once a week and tests twice per semester. (Focus-group interview 1)

During the second focus-group interview, the participants were asked to indicate how often they receive the assessment tasks. The evidence from the data showed that the participants receive the assessment tasks in the following form: two assignments per semester, practical work once a week, tutorials once a week, projects twice per semester and tests twice per semester.

In Biological Sciences 410 we do assignments, practicals, tutorials, projects and tests. our lecturer gives us two assignments per semester, practical work once a week, tutorials once a week, projects twice per semester and we write the tests twice per semester. (Focus-group interview 2)

The third focus-group interview indicated that there are no assignments and tutorials in this module. According to the responses, the group receives assessment tasks such as projects, practical work and tests. The group received the assessment tasks in the following form: projects once a semester, practical work once a week and tests twice per semester.

We do not do assignments and the tutorials in this module, but we do projects, practical work and the tests. We receive two tests per semester, practicals once a week and projects once a

week. The project that we receive was based on the model of the DNA molecule. (Focus-group interview 3)

The data obtained from the fourth focus-group interview has shown that the participants do not receive the assignments and the tutorials. According to the responses of the participants, the assessment tasks are received in the following form: practical work once a week, projects once per semester and tests once a week.

Every week we write the practical in the laboratory, we do projects once per semester and tests once a semester. In Biological Sciences 410 we do not do assessment-tasks such as the assignments and the tutorials. The lecturer said that we will do tutorials, but we never did them. (Focus-group interview 4)

4.5 Turnaround time for assessment feedback

According to the evidence related to the questionnaire data, the duration of receiving the feedback from the lecturer after submitting the assessment task depends on the nature of the assessment task. For example, the feedback for the assessment task such as the assignment can take long compared to other assessment tasks such as the tests and the practical. Evangeline mentioned that, “the turnaround time for the assessment-feedback depends on the nature of the assessment-task. If the assessment-task was too long and deep, the lecturer would take long to return the feedback to students”. According to the data collected through the questionnaires, the participants receive feedback after a week for all their assessment tasks. The participants receive feedback for their assessment tasks in the following form: Firstly, the participants receive feedback for the assignment after one week. Secondly, the participants receive feedback again after a week. Thirdly, according to the data, the participants receive feedback for tutorials after one month. In order to receive the feedback for tests, the participants wait for the duration of one month. Hence, two weeks is the duration that the participants await in order to receive feedback for projects.

According to the data collected through the first focus-group interview, receiving feedback depends on the nature of the assessment task. During this interview, the participants indicated that they receive the feedback for assignment in less than a week. Thus, receiving the feedback of their tutorials takes about two weeks. According to the evidence from the data of this interview, the feedback for the practical work takes about a week and one month for the tests.

It depends on the type of the assessment-feedback that we are given by our lecturer, for example the duration of getting the feedback for the assignment cannot be same with the

duration of getting the feedback for the practical work. We receive the feedback for tutorials after a month, practicals after a week and tests are after a month. (Focus-group interview 1)

The data collected during the second focus-group interview has shown that the participants do not receive their feedback timely. The participants indicated that they receive the feedback after two weeks for all their assessment tasks.

Two weeks is the maximum. It depends on the type of the assessment, but I can say in this module the feedback takes about two weeks for all our assessment tasks. We get the feedback after two weeks or more, because we are too many in class, our lecturer needs some sufficient time to deal with our assessment tasks. (Focus-group interview 2)

The data collected during the third focus-group interview has shown that the participants are not receiving the feedback timely. According to the evidence from the data, the participants receive the assessment feedback after two weeks. During the interview, the researcher asked the participants on the turnaround time for the assessment feedback, how long it takes to receive the feedback for each type of assessment task. The group answered that the maximum is two weeks and sometimes three weeks.

After submitting our assessment task, we usually wait about two weeks to receive the feedback. Two weeks is too long, but we understand, we are too many in the class our lecturer needs some sufficient time to mark our assessment and write the feedback. Sometimes it takes about three weeks to receive the feedback. (Focus-group interview 3)

The evidence from the data collected from the fourth focus-group interview has shown that the participants receive feedback for various assessment tasks. The group indicated that they receive the assessment feedback in the following form: the assignment in less than a week; feedback for tutorials after two weeks; the practical work takes about a week and one month for tests. These were the group's words:

We can say that it depends, but for assignments we usual get it in less than a week. We get the feedback for tutorials after two weeks, for practicals it is a week and tests we get it after a month. This gives our lecturer some enough time to deal with our assessment-tasks. (Focus-group interview 4)

4.6 How assessment feedback is received

The frequencies of assessment feedback received by the Biological Sciences' preservice teachers during the collection of both the questionnaire and the focus-group interviews data were obtained. The frequencies are shown in Table 3. The written feedback on the marked scripts was predominant.

Table 3

Types and frequencies of assessment feedback received

	Frequencies			
Data Source	Orally during lectures	In written form on the marked scripts	Electronically through emails or on learn@ukzn	Through face-to-face consultations
Questionnaire	08	21	04	03
Focus-group interviews (FGDS)	03	04	01	02

According to the evidence related to the data in Table 3, the participants receive assessment feedback such as oral feedback during lectures, written feedback on the marked tasks, an electronic feedback through emails or on learn@ukzn and through face-to-face consultations. The assessment feedback that stands out with the highest frequency is the written feedback on the marked scripts. In both the questionnaires and focus-group interviews, the feedback in written form on the marked scripts is frequently received by the participants. This suggests that the types of assessment tasks that the participants receive are frequently in written form. The types of feedback such as oral feedback during lectures, electronic feedback through emails or on learn@ukzn and the feedback through face-to-face consultations have received the lowest frequencies. The evidence from the above data has shown that the types of feedback other than the written feedback are less used by the lecturer. During the interviews, the participants indicated that the feedback through face-to-face consultation gives them the platform to ask questions from their lecturer regarding the assessment feedback. The participants further indicated that sometimes it is difficult to read the handwriting of the lecturer. Therefore, feedback through face-to-face consultations is preferable. It was shocking to find that the abovementioned type of feedback has received the lowest frequency.

4.7 How students prefer to get assessment feedback

The frequencies of students' preferences of assessment feedback obtained from both questionnaires and the focus-group interviews data are displayed in Table 4.

Table 4

Assessment feedback preferences

	Frequencies			
Data Source	Orally during lectures	In written form on the marked scripts	Electronically through emails or on learn@ukzn	Through face-to-face consultations
Questionnaire	09	21	05	01
Focus-group interviews (FGDS)	03	02	02	04

The data in table 4 shows that most participants (questionnaire: 21 out of 30) preferred to get assessment feedback in written form on the marked scripts. This was evident when the written feedback on the marked scripts received the highest frequency in the questionnaire data. Other types of feedback such as orally during lectures, electronically through emails or learn@ukzn and face-to-face consultations have received the lowest frequencies compared to the written feedback. The frequencies of the abovementioned types of feedback are as follows: orally during lectures has received the frequency of 9; electronically through emails or learn@ukzn has received the frequency of 5; and feedback through face-to-face consultation has received the frequency of 1. The feedback through face-to-face consultations has received the lowest frequency compared to other types of feedback that the participants received in this module.

During the focus-group interview in this section, the participants asserted that feedback through face-to-face consultations and oral feedback during lectures provide them with the platform to ask questions regarding their feedback. The participants also asserted that sometimes it is difficult to follow the handwriting of their lecturer when returning the feedback. Therefore, the participants prefer the abovementioned types of assessment feedback. The feedback through face-to-face consultations has received the highest frequency compared to other types of feedback. This type of feedback has received the frequency of 4. The frequencies of the types of feedback are as follows:

Oral feedback during lectures has received the frequency of 3, while the written feedback and electronic feedback through emails or learn@ukzn have received the frequencies of 2.

We prefer it through face-to-face consultation, because if we do not understand, we will be able ask questions. Again, face-to-face consultation is also fine; because it happens that sometimes you cannot access your emails. We prefer face-to-face consultation, because there is only you with the lecturer, there is no pressure from people such as your class mate. Again, it is not easy to follow the handwriting of the lecturer. (Focus-group interview 1)

4.8 How students use assessment feedback

4.8.1 Questionnaire data

The frequencies of how students use assessment feedback are displayed in Table 5. The questionnaire data displayed in Table 5 show that the use of assessment feedback to prepare for future assessment tasks was predominant.

Table 5

How preservice teachers use assessment feedback (questionnaire data)

How assessment feedback is used	Frequency
To prepare for future assessment tasks	09
For revision purposes	09
To correct their mistakes	08
To improve their performance	08
To reflect on the assessment task	03
As a guide to learning	01

This section describes how Biological Sciences preservice teachers use the assessment feedback from their lecturer. The data from the above table has shown that the participants use the assessment feedback for various purposes. During the collection of data questionnaire, it was evident that the participants use assessment feedback in the following ways: to prepare for future assessment tasks; for revision purposes; or to correct their mistakes in the learning of Biological Sciences 410. Furthermore, the participants use assessment feedback to improve their performance in this module,

to reflect from their assessment tasks and as a guide to their learning. According to the evidence related to the data collected through the questionnaires, it is evident that the participants respond positively to the assessment feedback that the lecturer provides. Hence, the ways in which participants use the assessment feedback can be seen to promote learning. It was interesting to note that the participants seemed reluctant to take their learning to another level by using the assessment feedback. It was also interesting to observe that the participants value the feedback in their learning. In addition, it was evident that they are learning from the feedback they are receiving.

4.8.2 Focus-group interviews data

In the first-focus-group interview, the preservice teachers indicated that they used assessment feedback in various ways. Firstly, the preservice teachers used it to prepare for future assessment tasks. Secondly, the preservice teachers used the assessment feedback to correct the mistakes that the lecturer had spotted in the previous assessment task. Thirdly, the preservice teachers used the assessment feedback as a guide to their learning of the Biological Sciences for Educators 410.

We use the assessment-feedback to prepare for tests, assignments and to know better the content in this module, which Biological Sciences 410. We use the assessment-feedback to correct our mistakes. The feedback that we get for the assessment is very important because it helps us to see where we can improve. It serves as a guide and the catalyst to my studying. We use it for improvement. We use it to prepare for the upcoming tests as well as the exams. So that we know our strengths and weaknesses. (Focus-group interview 1)

The second focus-group indicated that they used assessment feedback to prepare for upcoming assessment tasks. The assessment feedback assisted the preservice teachers to improve their performances.

The received assessment feedback shows us where we are lacking and then we improve on that. We use it as a lesson moving forward. We also refer to the feedback in order to do better. We use it to prepare for upcoming assessment tasks, because we do not want to repeat the same mistakes. We need to improve our performance. (Focus-group interview 2)

The third focus-group used assessment feedback to prepare for upcoming assessment tasks, correcting the mistakes and changing their learning strategies. They also used the assessment feedback to prepare for upcoming assessment tasks and to correct their mistakes in the learning of Biological Sciences for Educators 410.

We use feedback to further our knowledge so that we do not repeat the same mistakes in future assessment tasks. We use it to prepare for the next assessment by focusing on my weaknesses so that we can do better. Sometimes we change our learning strategies and study techniques. (Focus-group interview 3)

The fourth focus group mentioned that they used assessment feedback to correct their mistakes and improve their performance. This is similar to what other groups shared regarding the use of assessment feedback. Using the assessment feedback the way they did helped them improve performance in upcoming assessment tasks.

If it happens that the feedback is negative, we use it to improve so that we get better marks in future. If we get a comment that suggests that we need to pull-up my socks, we go to that chapter and spend a lot of time on it. If we passed the chapter, we spend less time on it. (Focus-group interview 4)

There were multiple uses of feedback amongst the preservice teachers. The preservice teachers used assessment feedback as a guide to prepare for future assessment tasks, to correct the mistakes, for revision purposes, to improve the performance and to reflect on the assessment task. Majority of the preservice teachers used assessment feedback to prepare for future tasks, to correct their mistakes, for revision purposes and to improve their performance.

4.9 Usefulness of assessment feedback

4.9.1 Questionnaire data

The analysis has shown that from 30 participants, 26 find the assessment feedback useful in their learning. Out of 30 preservice teachers, 26 preservice teachers indicated that the assessment feedback they receive is useful in their learning. The data was generated between July and October 2018. This is what Happiness said:

The feedback that I receive in this module is very useful, because it improves my knowledge in this module. It is useful, because it informs me about the areas that need my attention. It also tells me more about my strengths and weaknesses. (Happiness, questionnaire)

However, four preservice teachers said that the assessment feedback is not useful in their learning. During the collection of questionnaire data, 4 participants indicated that the lecturer returns assessment tasks with ticks and crosses only. According to Alima, Charmaine, Evangeline and Cynthia, the assessment feedback that they receive in this module is not useful. During the collection of data from questionnaires, Evangeline mentioned:

The assessment feedback that I receive from the lecturer is not useful. The lecturer gives us the feedback that has only the ticks and the crosses. Sometimes I find it difficult to understand what went wrong to my assessment tasks. (Evangeline, questionnaire)

4.9.2 Focus-group interviews

During the first focus-group interview regarding the usefulness of the assessment feedback, the group shared that assessment feedback is very important in their learning because it helps them to understand why the lecturer has marked them wrong or correct in the assessment tasks. These were the words of the first focus-group interview:

It is very useful because if we have something wrong, we will see how we can develop ourselves. It is very useful, because it helps us to prepare. I remember when we got back our test one for this module, most of us got 45 out of 75, we passed but it was not good enough for us. Therefore, assessment-feedback is very useful to us because it helps us to improve. It is very useful, because it encourages us to put extra effort in your work. (Focus-group interview 1)

During the second focus group, the preservice teachers felt that assessment feedback was useful in their learning. The preservice teachers seemed to understand the role of assessment feedback in this module. The preservice teachers expressed that the assessment feedback was useful in their learning since the module that they are doing was challenging. When the group was asked about the usefulness of the assessment feedback, they mentioned that:

It is useful, since it consists of the comments. Therefore, the lecturer's comments help me to improve for the next assessment task. It is not useful sometimes, because we are given feedback that you do not understand and there is no one to help you to understand. We do not do the corrections and we rely on others for help. It is useful, because at some point you know how to answer some questions. Therefore, feedback alone can mould you and make you better for upcoming assessment tasks. (Focus-group interview 2)

During the third focus-group interview, the participants also expressed that assessment feedback is useful in their learning because it improves their knowledge of the content. The assessment feedback that the participants receive from the lecturer is useful in a way that it informs them about their strengths and weaknesses. Regarding the usefulness of the assessment feedback, the group shared that:

The assessment feedback is very useful, because it helps us to improve. The assessment feedback improves the knowledge of the content, since the content of this module is challenging. We improve by not repeating the same mistakes and it is the assessment feedback that highlights the mistakes that we are making as students. (Focus-group interview 3)

However, during an interview with this group, it also appeared that sometimes the feedback the participants receive is not clear. According to the participants, the feedback does not address the issues related to their learning of the Biological Sciences for Educators 410. It was evident that the participants wanted feedback that addresses their challenges in the learning of the module. The participants further added that the feedback they receive does not tell them much about their learning. It only shows the ticks and the crosses. The group mentioned that:

The feedback that we get from the lecturer is not dealing with the challenges that we are facing in this module. We want feedback that is relevant to the challenges that we are facing. Sometimes we receive the feedback that has only the crosses and the ticks. (Focus-group interview 3)

During the fourth focus-group interview, the preservice teachers expressed that feedback was useful, because it enabled them to understand the topics that they were struggling with. They further added that it was very important to receive feedback because it enabled them to address their weaknesses. They said:

Receiving feedback in this module is useful, because it enables you to understand the topics that the student is struggling on them. It is very useful. Without feedback you cannot know that you are lacking in a certain chapter. It also enables you to plan on how to work on the weaknesses suggested in the feedback you get. (Focus-group interview 5,

4.10 Students' recommendations

According to the evidence related to the questionnaire data, all the forms of assessment feedback are available to the students. However, during the collection of questionnaire data the participants recommended several changes with respect to the assessment feedback. The participants recommended that the lecturer should consider all types of feedback when informing them on their assessment tasks. This may mean that the lecturer should rely more on one type of assessment

feedback. Thus, the other types of assessment feedback are least used by the lecturer. The data presented in table 4 has shown that there is no stability in the use of assessment feedback by the lecturer. The written feedback on the marked scripts was frequently received by the participants as indicated in the questionnaires, while the feedback through face-to-face consultations was frequently received by the participants as revealed in the focus-group interview. Furthermore, the participants in the focus-group interviews suggested that the feedback for Biological Sciences for Educators 410 should be timely. The focus-group interviews data has shown that the participants do not receive the feedback timely. These were the group's words:

We would like to receive the feedback from our lecturer timely, because as we have mentioned earlier that we receive the feedback mostly after 2 weeks. Sometimes we receive the feedback that is no longer relevant, because as students you do not even know how to use it since it came late. (Focus-group interview 4)

The participants also indicated that the feedback for Biological Sciences for Educators should be detailed. According to the evidence related to the focus-group interviews, it can be noted that the participants sometimes receive the feedback which is not detailed. The participants further indicated that the feedback they receive has only ticks and crosses. According to the participants, this feedback is not detailed and it does not assist them to improve in this module. These are the group's words:

We recommend that the feedback must be timely, because we receive it very late. We receive our feedback mostly after weeks. We also recommended that the feedback to be detailed, because the feedback that we get has only the crosses and the ticks. This type of feedback is helping, and we are not improving in this module. (Focus-group interviews 2)

4.11 Chapter summary

The data of this study was generated through questionnaires and focus-group interviews. The data presentation was based on the participants' understandings of assessment feedback, importance of assessment feedback, frequency of the assessment tasks, turnaround time for the assessment feedback, how assessment feedback is received, how students prefer to get the assessment feedback, how students use the assessment feedback, usefulness of the assessment feedback and students' recommendations with regard to the assessment feedback. The participants seemed to understand the assessment feedback in their learning of the Biological Sciences for educators 410. They also seemed to experience some difficulties in differentiating between the types of assessment tasks done in the module. Assessment feedback was important to the participants because it informed them on how

they performed in the assessment tasks. The participants used the assessment feedback to prepare for future assessment tasks, correct the mistakes and improve their performances respectively.

CHAPTER 5

FINDINGS AND DISCUSSION

5.1 Introduction

The purpose of this study was to explore Biological Sciences preservice teachers' sense-making of assessment feedback at a South African University. The research questions were as follows: What are the Biological Sciences preservice teachers' understandings of assessment feedback? What types of feedback do Biological Sciences preservice teachers receive for their assessment tasks? How do Biological Sciences preservice teachers use the feedback they get for their assessment tasks? Why do Biological Sciences preservice teachers use assessment feedback the way they do?

In this study, the interpretive paradigm was adopted. The researcher then used a qualitative approach and a case study research design. Data was generated through a questionnaire and four focus-group interviews. There were 30 participants who completed the questionnaire of which 20 were purposively selected for the focus-group interviews.

5.2 Findings

In order to explore Biological Sciences preservice teachers' sense-making of assessment feedback, data was collected through questionnaires and focus-group interviews. The data of this study was both described in words and presented in five tables. The frequencies of each participant were calculated in each table. Table 1 showed participants' responses on understanding assessment feedback. Table 2 showed frequencies of assessment tasks based on the questionnaire data, while table 3 showed how assessment feedback is received; table 4 showed how students prefer to receive assessment feedback, while table 5 showed how students use assessment feedback. The presentation of the findings will be based on the themes that emerged from the data.

5.2.1 Biological Sciences preservice teachers' understandings of assessment feedback

This section describes the understanding of the Biological Sciences preservice teachers concerning the assessment feedback with respect to the research question one: What are the Biological Sciences preservice teachers' understandings of assessment feedback? To respond to this research question, the researcher considered the themes that emerged from both questionnaires and the focus-group interviews.

Theme 1: The Biological Sciences preservice teachers understood assessment feedback in four different ways: assessment feedback as the report of the students' assessment task; as marks of students' assessment task; the reflection on the assessment tasks; and assessment feedback in improving performance.

5.2.1.1 The assessment feedback as the report of the students' assessment task

The findings in this section showed that students understand assessment feedback as a report based on a task completed by students. To illustrate this, during the focus-group interviews one of the groups said,

We understand assessment feedback as the report that the lecturer makes after he has completed the marking of the assessment task. It is the process whereby the lecturer comes to a lecture and gives us the report of the assessment task what we have completed. (Focus-group interview 1)

5.2.1.2 Marks of students' assessment task

The findings also revealed that students viewed assessment feedback as marks of students' task. The participants viewed assessment feedback in this way because of the influence they get from the South African education system in the early stages of their learning. Students are exposed to the South African education system which links learning to grades before enrolling to the university. Therefore, the task-oriented education system that participants receive in the early stages of their learning links learning to grades.

5.2.1.3 Reflection on the assessment tasks

Data showed that students also view assessment feedback as a reflection on an assessment task. The participants view assessment feedback in this way because they were not taught about it. This is a wakeup call for the universities to start considering the strategies that could emphasise the importance of feedback to students.

5.2.2 Types of assessment feedback that the participants receive

This section of the study addressed the second research question: What type of feedback do Biological Sciences preservice teachers receive for their assessment tasks? The participants have expressed that they receive various types of assessment feedback in the learning of Biological Sciences for Educators 410. To answer the above research question, the findings concerning this

research question were defined in one broad theme and three subthemes that emerged from the data collected.

Theme 2: The participants receive various types of assessment feedback, but written feedback, oral feedback and electronic feedback were the most reported.

5.2.2.1 Written feedback on the marked scripts

The findings revealed that the written feedback was frequently received by the participants. This type of feedback has received the highest frequency. The participants seem to frequently receive the written feedback because in higher education, lecturers over rely on this type of feedback. In addition, participants often receive the written feedback because of the nature of their assessment tasks. The assessment tasks that the participants receive in this module are often in written form, which encourages assessment feedback to also frequently be in written form. This finding is similar to (Murtagh & Baker, 2009) who found that in the context of higher education, written feedback has great chances to be delivered to students.

The highest frequency of written feedback is supported by what Alima mentioned during the collection of questionnaire data:

I get most of my feedback in this module in a form of written. The lecturer returns the assessment-task with the comments written on the assessment task. Written feedback is helpful because you can refer to it even after a long. What I do usually when the lecturer gives us the assessment-tasks with feedback, I put it in a safe place so that it cannot get lost.

(Alima, questionnaire,)

The above finding is similar to those of Race (2005) who found that the advantage of written feedback is that students can refer to it repeatedly. This simply means that the participants can continue to learn from it.

During the second focus-group interviews, the participants indicated that the written feedback is mostly received in this module compared to other types of assessment feedback. During the interview, the group shared:

We receive most of our feedback in written form. When the lecturer returns the assessment task such as the practical work, test and assignment, they come with the comments written on them. That is why we said most of the feedback we get is in the written form. (Focus-group interview 2, October 20, 2018).

5.2.2.2 Oral feedback during lectures and through face-to-face consultations

The findings from all participants in questionnaires and in the focus-group interviews indicated that the participants receive assessment-feedback orally during lectures and through face-to-face consultations. The participants receive this type of feedback because during lectures is where most lecturers get the opportunity to discuss feedback with students. During this process students are given the platform to ask questions regarding their assessment feedback. However, participants receive this type of feedback because it saves time than other types of feedback, which are time-consuming. Participants receive oral feedback during lectures because they find it difficult to read the handwriting of the lecturer. Hence, the oral feedback gives them the opportunity to express themselves concerning the feedback that they receive. This finding is similar to those of Race (2005) who found that during this process, a student has the opportunity to ask questions concerning their performance. Evangeline mentioned this:

I have a problem with the feedback that is a form of written, because sometimes I find it difficult to follow the handwriting of my lecturer. Seriously, I cannot read his handwriting and that is why I prefer the oral feedback, because that is where I get the chance to ask the questions. (Evangeline, questionnaire,

During my interview with the third group, the participants highlighted that they receive the oral feedback from their lecturer. The group also indicated that during oral feedback it is very important to pay attention and ensure that one follows everything. According to this group, the above mentioned could encourage students to ask questions concerning their assessment feedback. These were the group's words:

The type of feedback that we frequently receive in this module is the written feedback, but we also receive the oral feedback during lectures. This is where we get the opportunity to ask questions concerning our feedback, because sometimes we find it difficult to read the comments on the marked scripts. (Focus-group interview 3,

I also found out that the participants receive feedback through face-to-face consultations from their lecturer. The participants receive this type of assessment feedback because the aim is to give them the platform to ask questions concerning their feedback in the learning of Biological Sciences for Educators 410. Hence, it can be noted that the above type of feedback is least received by the participants. To support the above-mentioned statement, this type of feedback has received the lowest frequency. The aforementioned assessment feedback has received the frequency of 10, which

is the lowest frequency. This finding is similar to those of Hyland and Hyland (2006) who found that Some students seem to have phobia when it comes to face-to-face communication. During the fourth focus-group interview, the participants put it in this way:

In this module, we do not receive much of the assessment feedback through face-to-face consultations. You have to make an appointment in order to consult the lecturer. You cannot just consult the lecturer at any given time. Some students are not brave enough to have face-to-face consultation with the lecturer. (Focus-group interview 2,

5.2.2.3 Electronic feedback through emails or learn@ukzn

The findings in this study revealed that the participants receive the feedback such as an electronic feedback. Earlier in this study, the researcher stated that the preservice teacher's enrolment has increased exponentially over the years at a South African University. Therefore, the participants receive an electronic feedback because the aim is to condense the hours that are spent commenting on the students' assessment tasks. This finding is similar to those of Hyland and Hyland (2006) who found that the number of hours that can be spent commenting on students' tasks is condensed when lecturers rely on electronic feedback. Hyland and Hyland (2006) further found that the above provides a platform for electronic feedback to be considered in teaching and learning.

It was during the collection of data from questionnaires when Londy stated that they receive an electronic feedback through emails or learn@ukzn. She further added that feedback through electronic is accessible since they have access to internet. According to the evidence related on the data of this section, the participants do not frequently receive the aforementioned type of assessment feedback. During the fourth focus-group interviews, the participants in this study indicated that they receive electronic feedback through emails or learn@ukzn even though they do not receive it frequently. The group also disclosed that sometimes they are lazy to login to the learning and view the assessment feedback. The group commented:

We receive the electronic feedback; the problem is that sometimes we are lazy to login to the learning site and view the feedback. We are also lazy to open our emails and view the assessment feedback. We just ignore the feedback. It is not something we receive frequently. (Focus-group interview 4,

5.2.3 How do students use assessment feedback

The third research question of this study aimed to understand why Biological Sciences preservice teachers use assessment feedback. To answer this research question, a single theme and three

subthemes that emerged from the data collected through questionnaires and the focus-group interviews were used.

Theme 3: The participants use the assessment feedback in three different ways: to prepare for practical, test and the exam, to organise their own learning and as the base for consultations with the lecturer and more capable colleagues.

5.2.3.1 Preparation for practical, test and the exam

In this section the findings revealed that the participants use assessment feedback to prepare for practical, test and the exam. The participants use the assessment feedback in this way because the aim is to improve their performance of assessment tasks. The evidence related to the data has also shown that the participants use the assessment feedback in this way because the aim is to improve their learning and achieve better marks. This finding is similar to those of Murtagh and Baker (2009) who found that feedback offers students with the information to feed-forward into their future work. During the collection of questionnaire data, 28 of the participants indicated that they use the assessment feedback to prepare for practical, test and the exam. To support the abovementioned statement, the use of assessment feedback to prepare for future assessment tasks has received the highest frequency of 9.

During the first focus-group interview, the participants indicated that they use assessment feedback to prepare for practical, test and the exam. This group further added that they use assessment feedback in this way because the aim is to improve their results. When asked about how they use the assessment feedback, the group mentioned:

We use the assessment feedback to prepare for our practicals, tests and the exams and to know better the content of this module, which Biological Sciences 410. The feedback that we get for the assessment is very important for us, so it helps us to see where we can improve. It serves as a guide and the catalyst to our studying. We use it for improvement. We use it to prepare for the upcoming tests as well as the exams, so that next time we will do better. (Focus-group interviews 1,

5.2.3.2 To organise own learning

During the collection of data, it was evident that the participants use assessment feedback to organise their learning of Biological Sciences for educators 410. This finding was supported by Kay (2016) who argued that assessment feedback practices enhance students' ability to successfully organise

their own learning. If students are to use assessment feedback to organise their own learning, lecturers should create circumstances that encourage students to view themselves as active agents in their own learning (Kay, 2016). Regarding the use of assessment feedback to organise learning findings showed that the participants who completed both questionnaires and participated in the focus-group interviews were dependent on timetabling and the plan of action in order to organise their own learning. According to the evidence related to data collected, 20 out of 30 participants mentioned that they were disciplined regarding the use of the time-table to organise their own learning. The participants set out times at which learning of Biological Sciences for Educators 410 intended to occur. They developed this time-table and in this time-table Biological Sciences for Educators 410 appears every day. One of the comments from the participants was that they organise their learning through action of plan. This included several steps that students have taken to achieve their goal, which was to pass the module. These findings are similar to those of (Lombard, 2011) who found that the assessment feedback allows students to organise their own learning.

When asked about how they use the assessment feedback, the group had mentioned that:

We use the assessment feedback to organise our own learning so that we can pass the module, since it is a challenge module. We organise our learning through timetabling and action plan where we set times at which the learning of the module should occur. We also rely on the action plan which that acts as guide on the steps that we have to take in order to pass the module. (Focus- group interview 2)

5.2.3.3 The bases for consultations

The findings in this section showed that the participants use assessment feedback to consult their lecturer and more capable colleagues in the institution. This is similar to Ajjawi (2017) argument that assessment feedback can be seen as a process of communication. The participants also assert that assessment feedback does not only encourage them to consult, but also to facilitate an ongoing relationship with their lecturer. During the collection of both questionnaires and the focus-group interviews, the participants revealed that consultations with their lecturer and with more capable colleagues help them to correct mistakes and align with the view of their learning. When asked during the collection of questionnaire data, Precious said that, “I use assessment feedback to consult with my lecturer and also with others whom I think they are capable”. During the collection of the focus-group interviews, the group mentioned:

After receiving the assessment feedback, sometimes we consult our lecturer, especially when we have clarity seeking questions regarding assessment feedback. If we are not consulting the

lecturer, it can be anyone around the campus who is capable. This helps us to engage with the assessment feedback and act on it. (Focus-group interviews 1)

5.2.4 Why participants used assessment feedback the way they did

The fourth and last research question of this study seeks to understand why Biological Sciences preservice teachers use assessment feedback the way they do. The data used to respond to this question was extracted from the questionnaires and the focus-group interviews, which included a single theme and four subthemes that emerged from the data collected.

Theme 4: The participants' use of assessment feedback was influenced by various factors, but correction of mistakes, a need to pass the module, students' understanding of assessment feedback, and the frequency of assessment feedback were the most reported.

In this study, participants used assessment feedback in different ways. The use of assessment feedback is discussed in subthemes below.

5.2.4.1 Correction of own mistakes

The findings from both questionnaires and the focus-group interviews indicated that participants use assessment feedback to correct mistakes in their learning. This helps them to avoid repeating the same mistakes. For instance, Charmaine said that, "I use feedback to correct my mistakes and focus on the questions that challenged me in the previous assessment tasks". Nobuhle further added that, "I use feedback to correct the mistakes and focus on the areas which need the improvement". These findings were similar to DeLuca (2014) who argued that sufficient assessment feedback knowledge influences students to use the assessment feedback to correct mistakes in their learning. DeLuca (2014) further argued that assessment feedback dictates how students learn in order to achieve their desired goal. In this case the desired goal was to pass the module. During the collection of the focus-group interview data, the group mentioned:

We use assessment feedback to correct the mistakes that were identified by the lecturer in the previous assessment-tasks. This is very important because it help us to avoid repeating the same mistakes in our learning of Biological Sciences for Educators 410. (Focus-group interview 3)

5.2.4.2 A need to pass

The findings in this section showed that a need to pass the module was mostly reported. The participants from both questionnaires and the focus-group interviews indicated that they use

assessment feedback the way they did because the aim was to pass the module, since it is one of the difficult modules in the institution.

The participants' responses indicated that they use assessment feedback to pass the module, which is Biological Sciences for Educators 410. Through the questionnaire and the focus-group interview, the participants were asked why they use assessment feedback in this way. Sandra said that, "Bio 410 is a difficult module; I use assessment feedback to pass the module because I do not want to repeat this module next year". During the collection of the focus-group interviews data, participants also indicated that they use assessment feedback the way they did because the aim is to pass the module. These were the words of the group:

When we receive assessment feedback from our lecturer, we use it to correct the mistakes that were highlighted by the lecturer. This helps us to organise the way we learn the module. Therefore, we use assessment feedback in this way because we want to pass the module and move to the next one which is Biological Sciences for Educators 420. (Focus-group interviews 1)

5.2.4.3 Understanding of assessment feedback

The findings from table 1 reveal that the participants understand assessment feedback as the report of the students' assessment tasks, marks of students' assessment task, reflection on the assessment tasks and assessment feedback in improving performance. According to Maggs (2014) the way students use assessment feedback is a reflection of their understanding. McNell (2015) further asserts that assessment feedback is an important aspect that helps students to make sense of their learning. As indicated earlier, the participants understand assessment feedback this way because of the influence that they get from the South Africa education system in the early stages of their learning. For instance, within the South African education system a report is viewed as part of assessment feedback. Observing how the participants use assessment feedback, it is evident that they are influenced by their understanding of assessment feedback. For example, the participants use assessment feedback to prepare for practicals, test and the exam, since they want to pass the module. Therefore, from the abovementioned, it is clear the way participants use assessment feedback links learning to grades.

5.2.4.4 Frequency of assessment feedback

Table 2 shows that the participants receive assessment tasks such as assignments, practical work, tutorials, tests and projects. Hence, the data in table 2 shows that assessment tasks such as practical work and tests are mostly received by the participants. Therefore, this has influenced how the

participants use assessment feedback in their learning. During the administration of questionnaires and the focus-group interviews, the participants said they use assessment feedback to prepare for practical, tests and the exam. Therefore, this shows that the participants use assessment feedback the way they do because of its frequency. The group shared that:

What we do usually when we get assessment feedback, we go through the comments on the assessment feedback and use the comments to prepare for the upcoming practical and the test. This also helps us to prepare for the exam. (Focus-group interview 3)

5.3 Discussion of findings

In the previous sections, the findings of the study were presented. Therefore, in this section, the findings of the study are discussed in relation to existing literature.

5.3.1 The Biological Sciences preservice teachers' understandings of assessment feedback

The theme that emerged from the responses of the participants during the collection of data indicated that the participants understand assessment feedback in four different ways in their learning of Biological Sciences for Educators 410. According to the evidence related to data collected through questionnaires and the focus-group interviews, the participants understand assessment feedback as the report of the students' assessment tasks, as marks of students' assessment tasks, the reflection on the assessment tasks and the performance of students.

5.3.1.1 The assessment feedback as the report of the students' assessment task

The data collected through questionnaires and the focus-group interviews revealed that the participants understand assessment feedback as a report based on a task completed by students. The participants said that it is the process whereby the lecturer comes to a lecture and gives the report of the assessment task of what they have completed. It was noted that the participants linked the assessment feedback as a report, because within the South African education system, a report is viewed as part of assessment. These findings is similar to those of Race (2005) who found that participants viewed feedback as information about the performance of a thing or a person. (Hattie & Timperley, 2007) further found that assessment feedback was also understood as the information delivered by an agent, concerning the performance of students.

5.3.1.2 Marks for students' assessment tasks

The findings also revealed that students viewed assessment feedback as marks for students' tasks. The participants viewed assessment feedback in this way because of the influence that they get from the South African education system in the early stages of their learning. Students are exposed to the

South African education system which links learning to grades before enrolling to the university. Therefore, the task oriented education system that the participants receive in the early stages of their learning links learning to grades. This finding has also shown that the participants have misconceptions of assessment feedback. according to Hattie and Timperley (2007) feedback is more important than the mark allocated. Quinn (2015) further argues that students are concerned with the marks assigned to the assignment and ignore the feedback given.

5.3.1.3 Reflection on assessment tasks

The data in this section has shown that students also view assessment feedback as a reflection on an assessment task. The participants view assessment feedback in this way because they were not taught about it. during the collection of data, it was evident that this finding is similar to those of Sargeant et al. (2009) who found that receiving feedback inconsistent with self-perception stimulates extended reflection. Thus Sargeant et al. (2009) also found that facilitation of feedback and reflection could enhance assimilation, acceptance and use.

5.3.2 Types of feedback received by the Biological Sciences preservice teachers for their assessment tasks

According to the evidence related to the data collected through the questionnaires and the focus-group interviews, it is evident that the participants receive different types of feedback such as written feedback on marked scripts, oral feedback during lectures, electronic feedback through emails or learn@ukzn and face-to-face consultations.

5.3.2.1 Written feedback on marked scripts

During the analysis of data, it is noted that the type of feedback such as the written feedback on marked scripts, has received the highest frequency. During the collection of questionnaire data, 30 Biological Sciences preservice teachers participated and indicated that they receive written feedback from their lecturer. During this study, the participants indicated that the written feedback on marked scripts was very important for their learning of the Biological Sciences for educators 410 module because they can refer to it anytime. The participants further indicated that the written feedback remains for a long period in their learning. This finding is in line with Smallbone's (2010) view that the written feedback seems to be more powerful than oral feedback, since it remains as an everlasting record for future learning. This is also consistent with Smallbone's (2010) study, which further found that the written feedback is advantageous to students because they can refer to it at any time. Similarly, Race (2005) study found that the advantage of the written feedback is that students can refer to it repeatedly. Therefore, this simply means that the participants can continue to learn from it.

5.3.2.2 Oral feedback during lectures and through face-to-face consultations

As mentioned earlier, the evidence from both the questionnaires and the focus-group interviews revealed that the participants receive different types of feedback such as oral feedback during lectures.

This finding is in line with Murtagh and Baker (2009) who found out that oral feedback is helpful, because it comes with body language, facial expression, tone of the voice and the emphasis. The evidence related to the data collected showed that the participants are aware of the advantages of the oral feedback. According to the participants, oral feedback is very important in the learning of Biological Sciences for Educators 410 because it gives them the opportunity to ask questions regarding their feedback from the lecturer. This is also similar to Race's (2005) study that found during the process of oral feedback, students ask questions in order to seek clarity on where they went wrong in the given assessment task. This may help students fully engage with the assessment feedback.

From the data collected, it seems that the participants believe that oral feedback during lectures is more certain than other types of feedback. For example, during the collection of questionnaire data, Portia believed that receiving oral feedback during lectures is helpful, because sometimes she finds it difficult to engage fully with the written feedback because of the lecturer's handwriting. Portia mentioned that their lecturer's handwriting is not clear, which makes it difficult to engage with the feedback. This finding resonates with work by Higgins, Hartley and Skelton (2002) who found that at times students find it difficult to read and make sense of feedback delivered to them, if the handwriting used was not accurate.

The evidence from the questionnaire data and the focus-group interview data also indicated that the participants receive feedback through face-to-face consultations. It was noted that this finding is similar to those of McCann (2009) who found that students pay more attention to feedback that has good marks because they expected the assessment feedback given for a good mark to be more positive.

5.3.2.3 Electronic feedback

The evidence related to the data collected in the current study showed that the participants receive different types of feedback such as an electronic feedback through emails or learn@ukzn. However, this type of feedback has received the lowest frequency from both questionnaires and the focus-group interviews. This finding is in harmony with Hyland and Hyland (2006) who found that human feedback can be provided through technology in order to save time. It is also in agreement with

Higgins, Hartley and Skelton (2002) who found that the number of hours that can be spent commenting on students' tasks is condensed when lecturers rely on electronic feedback. During the collection of questionnaire and focus-interview data, the participants indicated that they receive electronic feedback through emails or learn@ukzn. In chapter 2, the extent to which the use of electronic feedback is growing in higher education was discussed (Race (2005). This finding is surprising because the data collected showed this type of feedback received the lowest frequency. It seems that the participants are lazy to open their emails or log in to learn@ukzn. Furthermore, the university has provided the participants with the computer laboratories, accompanied by the Wi-Fi, but the participants are failing to use this to their advantage. The finding also showed that the participants may be computer illiterate, because they cannot use the computer laboratories for academic purposes. For example, during the collection of questionnaire data, Pink indicated that she uses the computer laboratories for typing and searching, but not for checking feedback. However, Alima added that sometimes she prefers logging in to social networks such as Facebook and Twitter than checking the feedback from the lecturers. During data collection through the focus-group interviews, the participants indicated that they receive electronic feedback in their learning of the Biological Sciences for Educators 410. It was also surprising that this type of feedback received the lowest frequency.

5.3.3 How participants used assessment feedback and why

The evidence from the data has shown that the participants use the assessment feedback as follows: to prepare for future assessment tasks, and correct the mistakes in their learning.

5.3.3.1 Using assessment feedback to prepare for practical, test and the exam

The participants used assessment feedback to prepare for practical, test and the exam in their learning of Biological Sciences for educators 410. The participants said that they used the assessment feedback in this way because the aim is to ensure that they do not stray from the desired goal, which is to improve their performance. This resonates with the argument by (Spiller, 2009) who stated that the assessment feedback serves the purpose of enhancing the students' understanding of their goals of learning, the progress that is being made towards the goal and activities that need to be done to make better progress. Seemingly, the abovementioned could improve the performance of the participants. The participants used assessment feedback in this way because it helps them to avoid repeating the same mistakes in their learning. This resonates with the argument by Harman (2011) who said that assessment feedback should guide students and provide ongoing direction.

5.3.3.2 To organise own learning

During the collection of data, the participants indicated that they use assessment feedback to organise their learning of Biological Sciences for educators 410. This finding was supported by Kay (2016) who argued that assessment feedback practices enhance students' ability to successfully organise their own learning. If students are to use assessment feedback to organise their own learning, lecturers should create circumstances that encourage students to view themselves as active agents in their own learning (Kay, 2016). Regarding the use of assessment feedback to organise learning it was evident that the participants from both questionnaires and the focus-group interviews were dependent on timetabling and the plan of action in order to organise their own learning.

5.3.3.3 The bases for consultations

The findings in this section showed that the participants use assessment feedback to consult their lecturer and more capable colleagues in the institution. This is in support of the argument by Ajjawi (2017), who states that assessment feedback can be seen as a process of communication. The participants also assert that assessment feedback does not only encourage them to consult, but also to facilitate an ongoing relationship with their lecturer. During the collection of both questionnaires and the focus-group interviews, the participants revealed that consultations with their lecturer and with more capable colleagues help them to correct mistakes that align with the view of their learning.

5.4 Chapter summary

This chapter discussed the findings that emerged from the data generated during the course of the study. The participants conceptualised assessment feedback as a report of their assessment task and as the results of their assessment tasks. The participants received written feedback on marked tasks, oral feedback during lectures, face-to-face consultations and electronic feedback through emails and on the e-learning site. The findings indicate that the participants used assessment feedback to prepare for future assessment tasks, to correct their mistakes and to improve their performances.

CHAPTER 6

SUMMARY, RECOMMENDATIONS AND CONCLUSION

6.1 Introduction

The purpose of this study was to explore Biological Sciences preservice teachers' sense-making of assessment feedback at a South African University. This chapter reviews the summary of the findings, recommendations and conclusions of this study. The study was carried out at a South African University. It had three research questions: What are the Biological Sciences preservice teachers' understandings of assessment feedback? What type of feedback do Biological Sciences preservice teachers receive for their assessment tasks? How do the Biological Sciences preservice teachers use the feedback they get for their assessment tasks? Why do the Biological Sciences preservice teachers use assessment feedback the way they do?

6.2 Summary of findings

To answer the research questions, data was generated through the questionnaires and the focus-group interviews. Therefore, the findings were summarised according to four research questions of the study.

6.2.1 RQ1: What are the Biological Sciences preservice teachers' understandings of assessment feedback?

The evidence from the data collected has shown that the participants had different understandings of assessment feedback regarding their learning of the Biological Sciences for educators 410. The findings in this section indicated that the Biological Sciences preservice teachers understood assessment feedback in four different ways: assessment feedback as the report of the students' assessment tasks, as marks of students' assessment feedback, the reflection on the assessment tasks and assessment feedback in improving performance. However, the findings in this section show that the participants are confused about the concept of assessment feedback, even though they are in the same class and one group; they were expected to have the same understanding of assessment feedback.

6.2.2 RQ2: What type of feedback do the Biological Sciences preservice teachers receive for their assessment tasks?

Written feedback in the marked tasks, oral feedback during lectures or through face-to-face consultations and an electronic feedback through emails and learn@ukzn were the types of the

assessment feedback that the Biological Sciences preservice teachers receive in Biological Sciences for educators 410 module.

It was evident that the Biological Sciences preservice teachers receive most of their feedback in the written form.

6.2.3 RQ3: How do the Biological Sciences preservice teachers use the feedback they get for their assessment tasks?

The findings of this study showed that the participants use the assessment feedback for various purposes. The participants used the assessment feedback to prepare for practical, test and the exam, organise own learning and consult with the lecturer as well as more capable colleagues.

6.2.4 RQ4: Why do the Biological Sciences preservice teachers use assessment feedback the way they do?

The participants use the assessment feedback the way they did because of their understanding of assessment feedback and also the frequency of assessment tasks. The participants indicated that they use the assessment feedback in this way because the aim is to correct mistakes in their learning. Finally, the participants have argued that they use the assessment feedback in this way, because the aim is to pass the module which is Biological Sciences for Educators 410.

Figure 2 is a diagrammatic summary of the findings of the study showing the responses of the participants, themes and subthemes that emerged from the study.

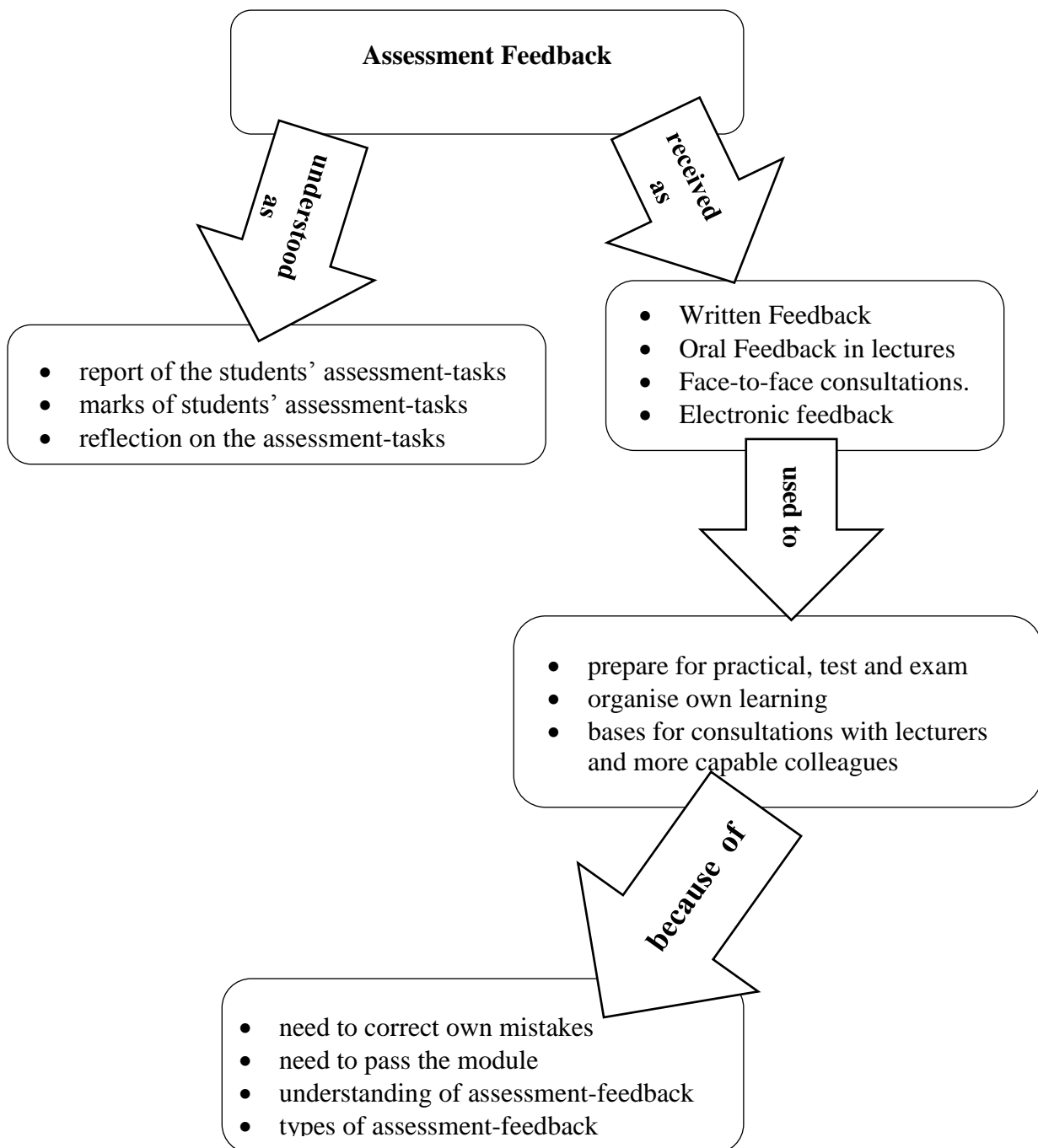


Figure 2. Summary of findings

6.3 Recommendations

6.3.1 Recommendations for Biological Sciences preservice teachers and Biological Sciences lecturers

According to the data that responds to research question number 1, students are confused about the concept of assessment feedback. This confusion is caused by the South African education system. I noted the Biological Sciences preservice teachers linked assessment as a report because within the

South African education system, a report is viewed as part of assessment. The education system is task oriented, which influences the understanding of students regarding assessment feedback. additionally, it is recommended that South Africa should adopt the education system, which will equip students with meaningful learning. A policy which equips students with meaningful learning motivates students to develop the skills of engaging with feedback before enrolling to tertiary education. Dunworth (2016) asserts that students are more likely to use feedback effectively only if lecturers provide timely and detailed feedback. It is recommended that lecturers should provide feedback that enhances students' understanding of assessment feedback. This may also improve the way students use assessment feedback in their learning of Biological Sciences for educators. If lecturers may instil the aforementioned by providing feedback that enhances students' understanding, it may not only improve their understanding of feedback or the way they use assessment feedback, but also make them retrieve new knowledge on it. What students do with the assessment feedback is an important consideration when it comes to transforming learning (Dunworth, 2016).

The second finding is that the participants receive assessment feedback such as written feedback on the marked scripts, oral feedback during lectures, through face-to-face consultations and an electronic feedback through emails or learn@ukzn. The third finding is that the participants use the assessment feedback for various purposes. For example, they use it to prepare for future assessment tasks, for revision purposes, to improve their performance, and reflect on the assessment tasks. Finding number 4 revealed that the participants use the assessment feedback the way they do because the aim is to improve their performance in the learning of Biological Sciences for educators 410. For this reason, it is recommended that lecturers and the university adopt a practice of assessment feedback which alerts students that using assessment feedback is not only restricted to improving their academic performance, but also making them independent in their learning. Evans (2013) supports this, arguing that assessment feedback can have varied roles depending on the learning setting, the needs of the learner and the purpose of the task.

6.3.2 Recommendations for further studies

The findings in this study have shown that the participants understand the assessment feedback in four different ways. These findings have revealed that students are confused about the concept of assessment-feedback which is of concern because at this level of studying, students should be able to understand it in their learning. It is recommended that further studies be conducted to explore reasons why and what can be done for students to understand the meaning of assessment feedback in

their learning. The current study was a qualitative study which used the sample of 30 participants. It is recommended that similar studies on assessment feedback should use larger samples from different South African universities.

6.4 Limitations of the study

According to Cohen et al. (2013), there is no perfectly designed research project. Cohen et al. (2013) further added that research projects have different restrictions. Therefore, this study is not excluded from the above argument. The current study was conducted at one of the South African universities and may not apply to other international universities because the contexts are not similar. The generalizability of the findings will be limited to similar contexts only. Therefore, this means that the environment where the study was conducted may have a huge impact on the way students understand assessment feedback in their learning of Biological Sciences for Educators 410. It also means that the environment may have a huge effect on how the participants use assessment feedback.

6.5 Chapter summary

This chapter presented the summary of findings and recommendations concerning the Biological Sciences preservice teachers' understandings of the assessment feedback, the types of the assessment feedback that the participants receive, the use of the assessment feedback and the reasons why they use the assessment feedback the way they do. The limitations of the study were provided and suggestions were given on the aspects that need further research regarding the assessment feedback in the learning of Biological Sciences for educators 410.

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APPENDICES

Appendix A: Ethical Clearance, University of KwaZulu-Natal



29 May 2018

Mr Lungisani Ngubane (210502450)
School of Education
Edgewood Campus

Dear Mr Ngubane,

Protocol reference number: HSS/0394/019M

Project Title: Exploring Biological Sciences preservice teachers' sense making of Assessment Feedback at a South African university

Approval Notification – Expedited Application

In response to your application received 07 May 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Dr Shamila Naidoo (Deputy Chair)

/ms

Cc Supervisor: Dr Tamirirofa Chirikure and Dr Doras Sibanda
Cc Academic Leader Research: Dr SB Khoza
Cc School Administrator: Ms Tyzer Khumalo

Humanities & Social Sciences Research Ethics Committee

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Website: www.unizh.ac.za



Appendix B: A Letter of Permission from the University of KwaZulu-Natal



17 April 2018

Lungisani Ngubane (SN 210502450)
School of Education
College of Humanities
Edgewood Campus
UKZN
Email: 210502450@stu.ukzn.ac.za chirikure@ukzn.ac.za lungah082@gmail.com

Dear Lungisani

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN), towards your postgraduate degree, provided Ethical clearance has been obtained. We note the title of your research project is:

"Exploring Biological Sciences Preservice Teachers' Sense Making of Assessment Feedback at a South African university".

It is noted that you will be constituting your sample by handing out questionnaires and/or interviews with Preservice Teachers on the Edgewood campus.

Please ensure that the following appears on your notice/questionnaire:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using 'Microsoft Outlook' address book. Identity numbers and email addresses of individuals are not a matter of public record and are protected according to Section 14 of the South African Constitution, as well as the Protection of Public Information Act. For the release of such information over to yourself for research purposes, the University of KwaZulu-Natal will need express consent from the relevant data subjects. Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

MR S. MOKOENA
REGISTRAR

Office of the Registrar

Postal Address: Private Bag Xp4001, Durban, South Africa

Telephone: +27 (0) 31 260 8005/2016 Facsimile: +27 (0) 31 260 7824/2204 Email: registrars@ukzn.ac.za

Website: www.ukzn.ac.za



Founding Campus Pietermaritzburg Pietermaritzburg Pietermaritzburg Pietermaritzburg Pietermaritzburg

Appendix C: Participants' Consent Form

I _____ (full name and surname)
confirm that, I understand the information contained in this document and the nature of the research project.

I understand that:

My participation is voluntarily.

I have a right to withdraw anytime from the research project.

My identity will not be disclosed.

A pseudonym will be used to protect my identity.

My involvement is purely for academic purposes only. There are no financial benefits involved.

At the end of the data collection process, copies of transcripts of the interviews, audio recordings will be made available to me for cross checking.

Signature_____

Date_____

Appendix D: Guidelines for Questionnaires

The Questionnaire

My name is Lungisani Ngubane. Kindly note that, I am doing research on assessment feedback as part of my Master in Education studies. It will be highly appreciated if you could participate in this research by answering the questions contained in this questionnaire. The questions are not for marks and there is no wrong or right answer.

Section A (Note: please tick(✓) in the appropriate boxes or write your responses in the corresponding spaces provided)

1. Gender: (Please tick(✓) in the appropriate box in the table below)

male	
female	

2. Age in years:

3. Year of study: (Please tick(✓) in the appropriate box in the table below)

1 st year	2 nd year	3 rd year	4 th year

4. Name of module:

Section B

Please answer the following questions about assessment feedback. There is no wrong answer, your understanding or opinion is what is important.

1. According to your understanding, what is feedback in relation to assessment?

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2. How important is it for you to get feedback for the assessment tasks you do in this module?

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3. How often do you do each of the following types of assessments in this module?

Please indicate your answer using a tick (✓)

Types of assessment	Once a week	Once a fortnight (2 weeks)	Once a month	Once a semester	Other (specify)
Assignments					
Practical work					
Tutorials					
Tests					
Projects					
Other (specify)					

4. How long after submitting an assessment task does it take for you to get feedback from your lecturer? Please indicate your answer using a tick (✓)

Less than one week	One week	2 weeks	One month	More than one month	Other (specify)
				

5. How do you get feedback for the assessment tasks you do in this module?

Please indicate your answer using a tick (✓)

Orally during lectures	In written form on the marked	Electronically through emails	Through face-to-face	Other (specify)

	scripts	or on learn@ukzn	consultations	

6. How would you prefer to get feedback for the assessment tasks you do in this module?
Please indicate your answer using a tick (✓)

Orally during lectures	In written form on the marked scripts	Electronically through emails or on learn@ukzn	Through face- to-face consultations	Other (specify)

7. How do you use the feedback that you get for the assessment tasks you do in this module?

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8. Do you find the feedback that you receive for the assessment tasks you do in this module useful? Please explain your answer in the appropriate box.

Yes	No

9. What recommendations would you make with respect to the feedback you get for your assessment tasks in this module?

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10. If you have any other comment with respect to feedback on the assessment tasks in this module, please write it in the space below.

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Appendix E: Guidelines for Focus-Group Interviews

Interview schedule

My name is Lungisani Ngubane. Kindly note that, I am doing research on assessment feedback as part of my Master in Education studies. I am very grateful that you agreed to take part in this interview. Please note that your anonymity will be guaranteed and none of the information collected from you will be shared with any of your lecturers. The data collected from you will be used for the purposes of my research only.

1. According to your understanding, what is feedback in relation to assessment?
2. How important is it for you to get feedback for the assessment tasks you do in this module?
3. How often do you do each of the following types of assessments in this module?
 - Assignments
 - Tutorials
 - Projects
 - Practical work
 - Tests

(e.g once a week; once a fortnight; once a month; once a semester)
4. How long after submitting an assessment task does it take for you to get feedback from your lecturer? *(e.g in less than a week; one week; 2 weeks; one month; more than a month)*
5. How do you get feedback for the assessment tasks you do in this module? *(eg orally during lectures; in written form on the in the marked task; electronically through emails or learn@ukzn; using social media (whatsapp/facebook/twitter etc); through face-to-face consultations)*
6. How would you prefer to get feedback for the assessment tasks you do in this module?
(eg orally during lectures; in written form on the in the marked task; electronically through emails or learn@ukzn; using social media (whatsapp/facebook/twitter etc); through face-to-face consultations)

7. How do you use the feedback that you get for the assessment tasks you do in this module?
8. Do you find the feedback that you receive for the assessment tasks you do in this module useful? *Please explain your answer in the appropriate box.*
9. What recommendations would you make with respect to the feedback you get for your assessment tasks in this module?
10. If you have any other comment with respect to feedback on the assessment tasks in this module, please write it in the space below.

Thank you once again for agreed to take part in this interview.

Appendix F: Questionnaires Transcript

The Questionnaire

My name is Lungisani Ngubane. Kindly note that, I am doing research on assessment feedback as part of my Master in Education studies. It will be highly appreciated if you could participate in this research by answering the questions contained in this questionnaire. The questions are not for marks and there is no wrong or right answer.

Section A (Note: please tick (✓) in the appropriate boxes or write your responses in the corresponding spaces provided)

5. Gender: (Please tick(✓) in the appropriate box in the table below)

male	13
female	17

6. Age in years: Five participants were twenty years old, eight participants were twenty one years old, thirteen participants were 22 years old and four participants were 23 years old.

7. Year of study: (Please tick(✓) in the appropriate box in the table below)

1 st year	2 nd year	3 rd year	4 th year
		✓	

8. Name of module: Biological Sciences 410

Section B

Please answer the following questions about assessment feedback. There is no wrong answer, your understanding or opinion is what is important.

11. According to your understanding, what is feedback in relation to assessment?

Participants one

Feedback is when you are given an evaluation on the work that you have provided as a student. It can be a project, tasks or tutorials but all the work given to you to test you or assess is brought back to you as a student on your module.

Participants two

Biological Sciences is a very challenging module that needs attention, focus and understanding. It is very challenging yet very interesting but needs to be taught in different methods.

Participants three

Feedback is when a lecturer gives back feedback on the assessment done in class or assignment. It can be in terms of group marks or individual marks. Feedback is getting back what you were assessed on and results are given.

Participant four

This is when you are being assessed and the report in relation to your assessment is brought back. It tells you of the places you need to improve on to.

Participant five

Feedback is anything that you get after writing a task or a test and then when those scripts come back we call that a feedback of what you have written.

Participant six

It is when the learners were writing a test or assignment and then the teacher will bring back their scripts for learners to see how did they do and where did they went wrong. The learners will then know their mistakes.

Participant seven

Feedback is when all assessments that I have submitted are returned to me after they have been marked and the lecturer at times get a chance to make us understand his / her expectations based on the assessment.

Participant eight

Feedback is a form or method of reporting back. In this case, feedback is done after learners have been assessed. In other words assessment must take place first before the feedback to it could be provided.

Participant nine

Feedback is when the lecturers provide us with the results of the work we did. So assessments help us to see if we can think and do it for ourselves.

Participant ten

A feedback in relation to assessment is a response based on the results you get from the assessment. It is a systematic way of making students understand their mistakes, ways of correcting them and ways of reaching to the required responses of an assessment.

Participant eleven

Feedback is what you or an individual obtain after he/ she performed a certain task or after written an assessment.

Participant twelve

Feedback is the process when the assessor provides feedback on what was expected from the students. This includes giving the memorandum of the paper or providing guidelines, to issue the results back to the students.

Participant thirteen

Feedback is a form of written work done in the classroom or task, assignment or practical given back to students after marked by their instructor.

Participant fourteen

Feedback is when you receive a report or how you did on assessment task. It can be in terms of script viewing etc. Depending on the assessment.

Participant fifteen

According to my understanding, a feedback is a reaction to a person's performance of something, be it a task done in class which aims to improve that persons abilities and performance.

Participant sixteen

Feedback is an essential element of the learning process. In its many forms, feedback allows students to reflect on their learning, clarifies areas where students can improve.

Participant seventeen

Feedback is an individual's performance after a particular task or activity. It is a reflection of the work produced and may be crucial in assisting the individuals' improvement.

Participant eighteen

According to my perspective, feedback is a report from a representative or lecturer such as a task written in the classroom or during the examination.

Participant nineteen

It is where by you receive the report of how you did on your assessment task.

Participant twenty

Feedback is where one gives opinion according to the experiences he / she had to that particular assessment. But in this case feedback is based on the assessment meaning we give feedback according to the assessment we had on Biology 410.

Participant twenty one

A feedback it is where by you have given learners an assessment and then you mark it after that you see how learners have achieved and then you give them back their activity books or papers so that they will see how they have achieved.

Participant twenty two

Feedback is what you get after having done a task or any activity. It is where you are told how you did and where you can improve so that you do better next time.

Participant twenty three

A feedback is where students are given chances to view whether or not they have achieved objectives of that particular assessment. It is where students have to reflect on the task done and relate it to the outcomes they should have got.

Participant twenty four

It is any form of information from the lecturer or a teacher.

Participant twenty five

Is the information about a particular assessment that is brought back which can be used as a basis for improvement.

Participant twenty six

Feedback is a material that is given to the learners which informs them of precisely what was required from them by the instructor or questions of an assessment.

Participant twenty seven

Feedback in relation to assessment is where you get feedback of the content or lesson given to learners by giving them an assessment to do. Thus can give a teacher feedback on how did the learner understand and where it needs to be improved in the next lesson.

Participant twenty eight

Feedback gives you clarity or should I say tells you how you have done in a particular assessment you have done. It gives you an understanding on how you have done in an assessment and makes you understand better so that you can do well next time.

Participant twenty nine

Feedback in relation to assessment is when a person can see how well or bad they did in a given assessment, they can determine their level of understanding in specific topics and so they know where to improve.

Participant thirty

Is a learning process that is essential in its much form, allow students to reflect on their learning. It clarifies where students can improve and it also provides the opportunity to self-

assessment skills and capabilities. Feedback can be provided individually or to groups not only by a teacher or academic staff.

12. How important is it for you to get feedback for the assessment tasks you do in this module?

Participants one

To me feedback is what keeps me going keeps me updated on what to do. It confirms on how much I need to work on my work. Assessment feedback helps me to revise, emphasised on my weak points, and also helps me to see how much I need to improve on my content for the module.

Participants two

Feedback is very important because it helps me to see where I need to improve and also helps me in receiving feedback about what I know and what I need to study on further.

Participant three

It is important to get feedback for Biological Sciences 410 because the results given back on the assessment helps me in doing revision on my own and get to know and what I need to do more or get to look into after feedback has been given.

Participant four

This is significant so that during the teaching course you know your weaknesses and strengths. In addition, you will know where to push much effort when you are teaching.

Participant five

It is important for me to get a feedback, so that I will know if I passed or not and if I have to study hard or just relax because I know a lot of topics in that chapter.

Participant six

It is important for me to get feedback because I use that feedback to study and I use these scripts for future. I found it important because I am able to consult the lecturer and ask questions and revise on the questions that were asked in the assessment.

Participant seven

It is very important because I get to see my mistakes and get the chance to improve the way I am doing my assessments and think according to the standards of the module.

Participant eight

It is of high importance since it shows you where your weaknesses are and it also helps in the process of improving where improvement is required. It also helps me to know whether the method I have been using to study is working or not and what is expected of me.

Participant nine

It is important and helps to weigh my understanding and knowledge of the module. It is a good way of self-assessment and for reflection.

Participant ten

It is highly essential because this is a very complex module where expectations of a lecturer are hardly met. Feedback enables me to not repeat the same mistake and to find strategies of linking the content and concepts of Biology. Most importantly, the feedback motivates me to study hard and understand better than before.

Participant eleven

It is very important because it is where by I can see my potential and to see my strengths and weaknesses in relating to this module.

Participant twelve

Feedback is an important part for learners. It gives learners the spirit to study. Learners get an idea of what the lecturer is expecting from them. It is a student understand the module better after receiving feedback. Feedback plays an important role, especially during examination.

Participant thirteen

It is imperative to get feedback so that you will reflect or compare your answers with your peers. After reflected you can do corrections or correct answers.

Participant fourteen

It is very important to help me understand where I did wrong and how can I fix it for the future, also it important because it informs me on my result standings.

Participant fifteen

For me it is important to get feedback for assessment because it helps to know where I should improve and to also know where I did well.

Participant sixteen

It is very important because I need to know where I did not do well on my task and so I can try to improve and obtain better result next time.

It is very important for me as it shows me my stance in terms of performance and also indicates places of improvement. It allows me to know my weaknesses and actually alerts me to be aware of what I know and do not know.

Participant seventeen

It is important for me because I can see and relate to what I need to improve and how much I know.

Participant eighteen

Feedback is very important to help me to understand where I did wrong.

Participant nineteen

It is for me because I see and connect to what I need to improve and show much I know.

Participant twenty

It is very important, getting feedback on the assessment that you were doing gives one an ultimate on how did she do according to the assessment and where she/ he went wrong so as to rectify these mistakes.

Participant twenty one

It is important to get feedback so that I will know my strengths and weaknesses in that assignment, test or activity and know how I will approach them next time when I am being asked those questions.

Participant twenty two

It is important so that I know where to improve when I have done an assessment task. When I am being given feedback, it allows for positive feedback and where I can better myself as a student so I can be the best teacher.

Participant twenty three

It is important as it gives me chances of reflecting on what I did well and wrong in the assessment that was given. It also gives me the opportunity to understand well how the assessment should have been done if I did not do it right in way this increases my level of understanding.

Participant twenty four

It is very crucial, so that I can see how badly or good I have done work. It helps me also to use it when I am studying starting with those questions that were hard to answer. It will strengthen my knowledge in understanding the module and also improve if I did badly on that assessment.

Participant twenty five

It is very important because it will help me to improve where I did not do right and do a better work next time.

Participant twenty six

Feedback for assessment completed is extremely important given the possibility of the content of the assignment reappearing in the final examination of the module; feedback allows the learners the opportunity to rectify their mistakes and shortcomings in the assignment or assessment ahead of the final exam.

Participant twenty seven

It is very important because I get to notice all my mistakes and try to work out better ideas. It gives me feedback of how I need to improve and how much content I need to know and understand as well as getting feedback on the module to improve my marks for future assessments.

Participant twenty eight

It is very important for me to get feedback on assessment tasks done because I need to see where I lack with understanding. I may think that I know something only to find out that I am actually wrong in the way I answer my questions. So it is important for the lecturer to give feedback after every test done.

Participant twenty nine

It is important because it helps me to determine things that I understand and knowledge on, it helps me to prepare for other test or exam that need to be written and it helps me to know better to know where I can improve and achieve more marks.

Participant thirty

It is very important, more than everything because this module it is too deep. There are new chapters that are being introduced and not everyone easily understand new things in order to improve performance as it is describe as often mistaken for criticism and what is viewed as negative criticism in actually construct criticism and in the best find of feedback that can help to formulate better decisions to improve and increase performance.

13. How often do you do each of the following types of assessments in this module?

Please indicate your answer using a tick (✓)

Types of assessment	Once a week	Once a fortnight (2 weeks)	Once a month	Once a semester	Other (specify)
Assignments	02	09	00	07	00
Practical work	23	02	04	01	00
Tutorials	08	02	03	09	00
Tests	00	01	20	04	00
Projects	00	09	03	12	00
Other (specify)	00	00	00	00	00

14. How long after submitting an assessment task does it take for you to get feedback from your lecturer? Please indicate your answer using a tick (✓)

Less than one week	One week	2 weeks	One month	More than one month	Other (specify)
				

01	08	20	01	01	00
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15. How do you get feedback for the assessment tasks you do in this module?

Please indicate your answer using a tick (✓)

Orally during lectures	In written form on the marked scripts	Electronically through emails or on learn@ukzn	Through face-to-face consultations	Other (specify)
08	21	04	03	00

16. How would you prefer to get feedback for the assessment tasks you do in this module?

Please indicate your answer using a tick (✓)

Orally during lectures	In written form on the marked scripts	Electronically through emails or on learn@ukzn	Through face-to-face consultations	Other (specify)
09	21	05	01	00

17. How do you use the feedback that you get for the assessment tasks you do in this module?

Participant one

The feedback given to me, I use it to assess on how much I have worked for a certain period of time and how much I need to work on. It even helps me to revise work given and where I need to do well on. Some of the feedback given to me I use it to prepare for tests as well as exams. Especially practical work, I tend to set and check how I could have done or how I can improve evaluation that I been given. Feedbacks on tests open my eyes and indicate how much I need the content as well as research skills.

Participant two

I use the feedback to correct all my mistakes by getting information that is correct and I can use for future purposes. Some of the feedback I use it to prepare for tests and prepare for exams. I use it to my advantage by researching more about the topics that I find them difficulties in.

Participant three

The written form on the marked scripts, I use it to practice or revise on my own as well as to get feedback on where and how I can improve myself on the content based on the tasks. Especially practical are very confusing at time, so the feedback given to me, I take it seriously and if I need to consult it, make it easy for me to do consultation because I have seen how much I know and how much content I need.

Participant four

I make use of it by improving on the mistakes and also use it to enrich my brain with knowledge which is scientific.

Participant five

The feedback that I get, I use it to know where I went wrong and to understand what is expected of me to do in my next assessment and also to understand the things that I did not find correctly in that question or task and then I read my script to do better on my examinations.

Participant six

The feedback that I get from the lecturer, I use it to study for my examination and I also use it to consult my teacher, so that I will see where I went wrong and then I will ask my lecturer to teach me again.

Participant seven

I use it when I am studying; I take the questions on the assessment and try to find some answers. If I got it wrong on the assessment, I get to see the way in which the questions are asked and prepare myself for exams and at times I compare them with the assessments of those who have obtained better marks than me.

Participant eight

I would use the feedback from the assessment tasks to improve where there are weaknesses. I will also use the feedback to guide me when studying for exams on what is extremely important.

Participant nine

I use it to reflect for myself and also help me to improve. For example tests help me to see how much time I spend in preparing for my work. I also use the practical to see if I do have subject content.

Participant ten

I analyse it and look for correct and wrong answers that I have provided in the assessment. I then, indicate the questions that are challenging and try to understand how the questions are answered. Most importantly, I use feedback to understand what I know and do not know to focus mostly on what I do not know. I also derive questions similar to that of the assessment that were given, after answering those questions, I use feedback to compare my answers and see if they are correct.

Participant eleven

Sometimes it acts as a revision since I am using it to do the following assessment and sometimes I use it to check if I really understand what I wrote on the assessment.

Participant twelve

I often use it for revision purposes, since feedback is given by the assessor. Feedback plays an important role in understanding how the questions should be answered. Feedback determines the length of answers that are expected by the lecturer and the type of answers. I also use feedback to check the understanding of my module content; usually I would compare my answers with the given feedback and thus expand from there.

Participant thirteen

I use feedback for assessment tasks, to study using them during tests and examination preparations. I use them to reflect my mistakes so that I will amend my mistakes.

Participant fourteen

I use it to revise on the problems and question that I did wrong and try to do some corrections. The feedback also becomes useful when studying for exams because if you have used it for corrections you would have special noted on the concepts that you did assessment on.

Participant fifteen

I use it to improve my performance where it needs to be improved and know my strengths in terms of where I did right.

Participant sixteen

I use it by reading the comments made by the lecturer and try to improve my work. This really helps because in the following tasks I manage to better results.

Participant seventeen

Feedback for me serves as a guide as to what I will focus on when preparing for the next task or the examination. I will consider it as some sort of a reflection of what areas need more of my attention than other areas. This assists me in putting more emphasis on the areas that are not well understood. Positive feedback encourages me to do well on the future tasks.

Participant eighteen

I use feedback to enhance my performance where there is necessity to improve it and know my strength.

Participant nineteen

This question was not answered.

Participant twenty

I use the feedback to look at my weaknesses and strengths as a result it becomes so easy to attack my weaknesses and know how to work on them. Getting feedback get us on the loop on how to deal with assessments next time.

Participant twenty one

I use feedback that I get for the assessment tasks to study for the following tasks and I view my tasks and see how I were supposed to answer certain questions and why did I get wrong. What was the reason for me to get it wrong and why the answers that I were wrong. I then see the lecturer during his or her consultation times to ask questions.

Participant twenty two

I use it in a good way if it is positive feedback then I ensure that I continue to do things that way. If it is negative feedback I will use to better myself and ensure that I improve and do better next time.

Participant twenty three

I use the feedback to give myself a better understanding of the assessment and a module as a whole. If it happens that I did the assessment wrong, I use the assessment to redo just gain more knowledge about the content of this module.

Participant twenty four

I use it when I am studying. It helps me to correct my mistakes and start with those questions that gave me a problem, and if the lecturer gave me the feedback on how to answer the questions next time I use that information.

Participant twenty five

The lecturer indicates on the script all the errors or mistakes, so I take note of the comments made and try to use them to enhance my work. I redo the tasks on my own and see if I can obtain better results, taking into consideration the comments being made.

Participant twenty six

I revisit the questions which I could not answer them correctly and I refer to the relevant sections of the prescribed slides and readings for the module and identify the correct answer in anticipation of the said questions reappearing in the module exams.

Participant twenty seven

I use this feedback to correct my mistakes, to do more research on what was reported of me to do on that certain assessment. I make comment and do research as well as using their feedback to consult for clarity. It can be bared on understanding lessons given as well as gaining more to improve what I did not give in the assessment. Assessment helps me see how far I am with knowing and understanding and how much is left for me to cover the expected content.

Participant twenty eight

Even though it does not help me that much because sometimes I write things exactly as they were in the slides but only to find out that you get it wrong. But I do use the scripts to check where I went wrong. I specifically use the wrongs to find the right answers that I should have used so it helps me.

Participant twenty nine

I use the feedback I get to help me do better on the other assessments that are given to us. I always use the feedback that I get on the assessment to know and correct myself on the mistakes that I have made when I was writing the assessment.

Participant thirty

I use the feedback to reflect on my assessment by correcting the mistakes that I have done. I also use it to improve my performance. I make sure that when I find the feedback from my lecturer, I firstly compare what is my answer sheet and with a feedback. I also use it to judge my level of working, the way I am committed to my studies especially in this module which is Biological Sciences.

18. Do you find the feedback that you receive for the assessment tasks you do in this module useful? *Please explain your answer in the appropriate box.*

Yes	No
<p>➤ There are twenty six participants who have agreed that the feedback that they are getting in this module is useful.</p>	<p>➤ There are five participants who think that the feedback that they getting in this module is not useful.</p>

19. What recommendations would you make with respect to the feedback you get for your Assessment tasks in this module?

Participant one

I think the way the feedback is given can be changed or put some extra effort on it. In class tests it must not be by paper only but also be by face to face or oral feedback because people can also be clueless. So these class tests must be revised in class before moving because feedback is a vital thing. I even think that for practicals, instructions must be stated very clearly and the lecturer must come prepared and make decisions in class that are confusing.

Participant two

I feel like a lecturer can be hands on the feedback given to students because some of the results are not good because students do not know and they lack understanding as well as good feedback about tasks. A feedback is there to help both students and the lecturer about how they are with the content and what needs to be done.

Participant three

Feedback for Biology 410 is not as helpful as it must be. The lecturer must put an effort as she gives feedback for students. For example practical assessments only the marked scripts serves as feedback yet it is failed but I recommend that as he gives feedback he must go through the mistakes and try to correct them so that we as students cannot have problems in the near future with regards to the practical work on the subject Life Sciences.

Participant four

Lecturers should increase time for consultations so that learners or students will be able to get help anytime they need it. It will also enable them to be open rather than to be shy when it comes to answering questions.

Participant five

The recommendations that I would make concerning this module it is to make sure that students understand why they fail or they pass. The lecturer can tell the students what is expected from them and what they are required to do. They should be given a lot of time.

Participant six

The recommendations that I can make is to make sure that each and every student contact the lecturer or the scripts are fetched during consultation times so that students will know what to

do on the following assessment not to just distribute scripts and let the students wonder how they have failed. The lecturer should also let students know what he is expecting from them since they have been given an assessment.

Participant seven

The recommendation that could make it is to use my assessment to prepare for my neither tests nor examinations using those question papers. The recommendation that I could make it is to consult every student to come to the lecturer's office to ask where they went wrong and where the lecturer is saying the answers are wrong even if it is their thoughts.

Participant eight

I would recommend that lecturers use the feedback they give to us as a guide to revise for the module as a whole. I would also recommend that they use the feedback of my assessment tasks to improve the way they assess in this module.

Participant nine

I would like the lecturers to give us more practical work and mark it and give to us this will help in improving in each and every work we do. Lecturers should give more feedbacks to students this will help us even them to see if we do understand the module or not.

Participant ten

I can first allude that the feedback I received was a great motivation. Lecturers should continue to show their interests in motivating students. I then recommend that the feedback should be accompanied by thorough revision because sometimes it is hard to recognise the handwriting of a lecturer. A lecturer should also specify the steps you should take reach to the answer.

Participant eleven

I wish that if an individual got an incorrect answer there should be a correct answer written by a lecturer so as to get clarity on our assessment.

Participant twelve

It would have been great if assessment occurs more often and thus feedback because that would inspire students to study consistently. I would also prefer feedback to be on the scripts because

some students do not visit the learning site. It would also be nice if the lecturer reflects on the assessment orally during lectures.

Participant thirteen

I will like the module not to be learned with online notes. I think the lecturers to be more prepared as the most of the time he was not well organised when it comes to presenting the lesson.

Participant fourteen

I would recommend that feedback should be done during tutorial sessions since we never had tutorials in this module. This would help the students to have face to face communication with the lecturer and also would allow others to learn from one another's mistakes and will increase learning.

Participant fifteen

There was no answer to this question.

Participant sixteen

I would say that feedback should be given in more specifics. The lecturer should specify and indicate all the errors. That could benefit both parties because I know exactly where to put more effort.

Participant seventeen

I would recommend that we are given more opportunities to interact with some of our weaknesses that were visible with feedback. I would suggest that in the feedback that we get there is more time invested in refining the content knowledge that was not understood.

Participant eighteen

This question was not answered by the participant.

Participant nineteen

This question was not answered by the participant.

Participant twenty

I think it will be very useful if feedback were also based on practical work that we do every week. In that case we could be the best product when it comes to teaching and do practicals with our learners.

Participant twenty-one

The recommendations that I would make with regard to the feedback, I will make sure that the feedback is through face to face consultation so that students why they are answers are wrong and what they were supposed to do in order to get good marks.

Participant twenty two

I would recommend that the lecturer have one on one session with other students than to just do it orally during lectures. Some students really need one on one session. The feedback that I get it is good and it helps me to understand where I went wrong when doing an assessment task and how I could improve and do better next time.

Participant twenty three

I would recommend that they use different style of addressing feedback so as to accommodate all different types of students because if one approach is used some students will have an advantage of understanding and gaining knowledge while others are disadvantaged simply because it is not the learning approach that helps them.

Participant twenty four

This question was not answered by the participant.

Participant twenty five

I would say feedback is very important and I would recommend that after each and every task done in class is given a feedback when returned to us, so that we know where and how to improve on the following task.

Participant twenty six

To achieve optimum efficiency with feedback on assessment tasks for future references, the lecturer should email the memorandum of completed assessment tasks to the students, which would be the simplest way for learners to identify and address their mistakes.

Participant twenty seven

This module need a lecturer that is fully prepared for me to work out all the obstacles, mistakes as well as explanations to everything that needs clarity. When I get an assessment, I expect the lecturer to do this by marked script but as well as oral or face to face consultation, so that the lecturer can notify the whole process of the assessment. Sometimes feedback on this module cannot be useful due to the fact that corrections and mistakes were not taken care of by the lecturer as well as remarks and how the assessment should have been done.

Participant twenty eight

It would be very helpful to us as Biological Sciences 410 students to get feedback in a way that it is helpful to us. I mean it is of no use to us as students if the scripts are marked and returned to us with no comments. So we could really appreciate if the lecturer could mark the script or assessment and put in some comments so that it would be helpful to us to know how to go about with the problem when it comes out again in the exam.

Participant twenty nine

The recommendation that I would make with respect to the feedback that I get for my assessment, is that for lecturers to give us positive and negative feedback in this can help us to know exactly as to which direction we are going with in this module. Feedback will help us know where we need to improve on.

Participant thirty

My recommendation is that it is important to use different ways of providing a feedback and I recommend it as useful method but I recommend oral feedback during the lecture because if there is someone who do not understand about what really the feedback entails he / she can ask a lecturer other than cramming answers are given by the lecturer while there is no understanding contained. It will also be easy to engage learners in discussion and this type of method can help a lot of people. I usually say that understanding is important than just knowing or assimilating information that you do not even know where it comes from.

20. If you have any other comment with respect to feedback on the assessment tasks in this module, please write it in the space below.

Participant one

I feel like there is a room for improvement from both students and the lecturer. There must be paid attention to because it is not an easy module but needs involvement. I repeat and emphasise that the lecturer must be prepared at all times, be organised and manage. In case of consultations, instructing in practicals as well as guiding orders to the class is the most vital thing. Doing revision in all the assessment tasks given to correct our mistakes.

Participant two

I feel like Biological Sciences 410 needs dedication from both the lecturer and students. There is too much lack of feedback and skills delivered to students and some of the tests are not helping because their feedback is not explained. For examples practicals can be so hard yet not clearly instructed or explained.

Participant three

As much as I am passing Biological Sciences 410 but I feel like I could have done better if the lecturer was cooperating with us as students. Next time the assessment given to students especially practicals must be clear when given. Instructions and feedback must be also clear and given on time. Revision must be done to rectify mistakes so as to do better next time. Positive feedback can be so inspiring and crucial.

Participant four

This question was not answered by the participant.

Participant five

The question was not answered by the participant.

Participant six

The question was not answered by the participant.

Participant seven

I do not have any comment.

Participant eight

The question was not answered by the participant.

Participant nine

They should give us printed notes in hard copies because the online learning sometimes is slowly and we need to go in the fields and some of the things we do in practical work.

Participant ten

The question was not answered by the participant.

Participant eleven

I wish that we can be given a memorandum after each assessment so as to put more effort on the next assessment.

Participant twelve

The question was not answered by the participant.

Participant thirteen

The question was not answered by the participant.

Participant fourteen

The question was not answered by the participant.

Participant fifteen

The question was not answered by the participant.

Participant sixteen

The question was not answered by the participant.

Participant seventeen

I would say that the feedback given is very much detailed, but the concern is that the instruction while the assessment task is given it is not always vivid as to what is expected from us as students. I would suggest that the instruction to improve so as to have more positive feedback, as there is mostly negative feedback showing the lack of understanding among many students.

Participant eighteen

The question was not answered by the participant.

Participant nineteen

The question was not answered by the participant.

Participant twenty

Feedback we are getting is very useful and it is going to help us when we go to the field.

Participant twenty one

The comments that I have regarding this module is that I was a friend of the lecturer so in that case, I could not even ask him questions of how did our group investigation went wrong because he is so scary and unapproachable but he teaches very well.

Participant twenty two

Some of the feedback that I have received it was not good and it made me feel as if you are stupid and sometimes you would be afraid to even go and consult with the lecturer. It was good on another level but sometimes the things that were said were unnecessary.

Participant twenty three

The feedback used in this module is one of the most strategic approaches; however, it is very important to use different or diverse forms of giving feedback to students.

Participant twenty four

The question was not answered by the participant.

Participant twenty five

I think feedback should be given with more specifics as to where to improve on the task. This should help us to know exactly where to correct our errors or mistakes.

Participant twenty six

The question was not answered by the participant.

Participant twenty seven

Assessment should be marked by the person who gives the instructions. The way I give answers and the marking students should be aware of that if feedback on practical is given

Participant twenty eight

This question was not answered by the participant.

Participant twenty nine

This question was not answered by the participant.

Participant thirty

In this module, it is important to use all feedback methods and not only one method because we as learners we do not understand in the same way. For example other learners can really understand through reading from reading their own while others can really understand through consulting where there will be through face to face consultation and then they will understand.

Appendix G: Focus-Group Interviews Transcript

Interview schedule

My name is Lungisani Ngubane. Kindly note that, I am doing research on assessment feedback as part of my Master in Education studies. I am very grateful that you agreed to take part in this interview. Please note that your anonymity will be guaranteed and none of the information collected from you will be shared with any of your lecturers. The data collected from you will be used for the purposes of my research only.

11. According to your understanding, what is feedback in relation to assessment?

Participant 1

To me, feedback is just to know or confirmation in your assignment with the marks and see how you have performed. Feedback is something that is given to you as results.

Participant 2

According to my understanding, feedback in relation to the assessment is the response that you get from certain things or from the assessment.

Participant 3

According to my understanding, feedback in relation to the assessment, is whereby you get the information about the assessment that you have done.

Participant 4

Feedback in relation to assessment is something that you get after you have done maybe a certain assessment whereby you want to see that particular information is useful.

Participant 5

It is when the teacher comes back to learners and update them on how they have performed on the given assessment task. The teacher informs them about their strengths and weaknesses. In order for the learners to know what needs to be fixed.

12. How important is it for you to get feedback for the assessment tasks you do in this module?

It is very important, because getting the assessment-feedback helps you to understand what went wrong in your assessment task. It helps you to know what do you need to do in future, in order to make things right. Also helps you to prepare, for example the examination and also for future assessment tasks.

Participant 2

It is very important, because I will know where I go wrong and correct my mistakes.

Participant 3

It is very important to get the assessment-feedback as a student, because it helps me to see the things that I was doing, what are the things that I did wrong, what is my potential and where can I improve. As a student sometimes you need to improve, so the assessment-feedback gives me the chance to see where I did I went wrong.

Participant 4

It is very important to get feedback, because it enables you as the student to see your potential regarding the module that you are doing. It also trains you, encourages you and what went wrong. It helps you to rectify your mistakes that you have done.

Participant 5

It is very useful, because it informs you as a student to know which chapters need your extra effort.

13. How often do you do each of the following types of assessments in this module?

Participant 1

- Assignments: in Bio 410, twice a month
- Tutorials: There were no many tutorials, only one we had.
- Projects: once a week or twice a month.
- Practical work: once a week.
- Tests : twice per semester

Participant 2

- Assignments: once a month.
- Tutorials: once per semester.
- Projects: none.
- Practical work: once a week.

- Tests : twice per semester

Participant 3

- Assignments: once a semester.
- Tutorials: once a week.
- Projects: Once a semester, it was a DNA model.
- Practical work: once a week.
- Tests : twice per semester

Participant 4

- Assignments: once a semester.
- Tutorials: once a week.
- Projects: Once a semester, it was a DNA model.
- Practical work: once a week.
- Tests : twice per semester

Participant 5

- Assignments: once a semester.
- Tutorials: once a week.
- Projects: Once a semester, it was a DNA model.
- Practical work: once a week.
- Tests : twice per semester
- Tests : twice per semester

(e.g once a week; once a fortnight; once a month; once a semester

14. How long after submitting an assessment task does it take for you to get feedback from your lecturer?
(e.g in less than a week; one week; 2 weeks; one month; more than a month)

Participant one

- It depends, e.g. assignment, this depends on the duration of the assessment. in a week
- Tutorials after a month.
- For practicals, it takes about a week.
- Tests, it is a month.

Participant 2

- Assignment: less than a week.
- Tutorials: Maybe after two weeks.
- Projects: None.
- Practical: After a week.
- Tests: It is usual one month.

Participant 3

It depends on the type of the assessment.

- Assignment: less than a week.
- Tutorials: Maybe after two weeks.
- Projects: None.
- Practical: After a week.
- Tests: After three weeks.

Participant 4

- Assignment: sometimes it can be both one and two weeks.

Participant 5

- Less than a week.

15. How do you get feedback for the assessment tasks you do in this module? *(eg orally during lectures; in written form on the in the marked task; electronically through emails or learn@ukzn; using social media (whatsapp/facebook/twitter etc.); through face-to-face consultations)*

Participant 1

- Orally during the lectures.
- In the written form in the marked task.
- Learn @ukzn.

Participant 2

- I get it through orally during lectures.
- Also in the written form in the marked tasks.
- Electronically through emails or learn@ukzn.
- As well as through face-to-face consultations.

Participant 3

- Like I said earlier, it depends on the nature of the assessment that has been given to me.
- For practical, orally during the both orally and in the written form.
- We also get it through face-to-face consultation especially the tests.

Participant 4

- We get through orally during the lectures.
- We also get it in the written form.
- As well as electronically in the emails or learn@ukzn.

Participant 5

- Orally during the lectures.
- In the written in the marked tasks.
- Then after it can be Moodle or on the emails.

16. How would you prefer to get feedback for the assessment tasks you do in this module?

(E.g. orally during lectures; in written form on the in the marked task; electronically through emails or learn@ukzn; using social media (whatsapp/facebook/twitter etc.); through face-to-face consultations)

Participant 1

I prefer through orally during lectures, because during the orals you get to know exactly and even ask questions if there is something that you do not understand. learn@ukzn and emails. Written form in the marked tasks.

Participant 2

I prefer it through face-to-face consultation, because if I do not understand, I will be able ask questions.

Participant 3

My preference is orally during the lectures, because that will give me the chance to talk face-to-face with the lecturer and also ask some questions just to correct the mistakes that I have made or that the lecturer has made.

Participant 4

It can be better, if we continue getting it in the written form in the marked task. It can be also better if we get it through electronically in the emails. Again face-to-face consultation is also fine; because it happens that sometimes you cannot access your emails.

Participant 5

I think during the lectures (orally). Also in the written form in the marked tasks. Mostly to be face-to-face consultations because sometimes students are not comfortable to ask questions during the lectures.

17. How do you use the feedback that you get for the assessment tasks you do in this module?

Participant 1

I use the assessment-feedback to prepare for my tests, assignments and also to know better the content in this module, which Biological Sciences 410.

Participant 2

I use the assessment-feedback to correct my mistakes.

Participant 3

The feedback that I get for the assessment is very important for me, so it helps me to see where I can improve. It serves as a guide and also the catalyst to my studying I use it for improvement.

Participant 4

I use it to prepare for the upcoming tests as well as the exams. So that I will know my strengths and the weaknesses. So that next time I will do better.

Participant 5

We use the feedback to assess ourselves as students.

18. Do you find the feedback that you receive for the assessment tasks you do in this module useful? *Please explain your answer in the appropriate box.*

Participant 1

It is very useful because if I have got something wrong, I will see how I can develop myself. It is very useful, because it helps me to prepare. Therefore, the assessment-feedback is very useful in this module.

Participant 2

It is very useful, because Biological Sciences for educators 410 is a very critical module. Sometimes were expected to write the answers as it is in the slide, because when you use your words you will get it wrong, therefore it is useful.

Participant 3

It is very useful, helps me a lot to see where I can improve. I remember when I got back my test one for this module, I got 45 out of 75, I have passed but it was not fair enough for me. Therefore, assessment-feedback is very useful for me because it helps me to improve and give my studies some extra time.

Participant 4

It is very useful, because it encourages you to put an extra effort to your work. It is useful because it helps you to improve.

Participant 5

It depends; sometimes feedback cannot help you if the future assessment task does not ask the same question.

19. What recommendations would you make with respect to the feedback you get for your assessment tasks in this module?

Participant 1

I recommend that the lecturer to do more orally feedback with us, because that is where we can get a chance to ask questions. Also in the written form in the marked task, because you see how you did get the marks.

Participant 2

I suggested that face-to-face consultation must be used, because it gives you a chance to ask questions. Unlike getting the feedback from social media, sometimes we do not check the emails.

Participant 3

I recommend that the lecturers should give back our assessments together with the memorandum which will serves as a guide to as students.

Participant 4

I can recommend that feedback should go together with the revision of the previous assessment task. Sometimes we fail to understand the feedback that is given. Therefore, revision can help us to master our work.

Participant 5

Biological sciences 410 has too much of the content, I recommend feedback to more of face-to-face consultations as well as through electronically.

20. If you have any other comment with respect to feedback on the assessment tasks in this module, please write it in the space below.

Participant 1

I do not have any comment.

Participant 2

I have no comments.

Participant 3

Students must always be given the feedback, because it is important for them to use it to improve. Lecturers must give feedback to students every time.

Participant 4

I suggest that our lecturers should bring back the feedback on time so that we will be able to work on our weaknesses since the semester is very short. This can also help us to prepare for the exams.

Participant 5

The lecturer should always bring the feedback to students, so that they can see their progress in this module.

Thank you once again for agreeing to take part in this interview.

Appendix H: Language editor's letter



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TO WHOM IT MAY CONCERN

This is to confirm that the dissertation written by Lungisani Ngubane, titled 'Exploring Biological Sciences Preservice Teachers' Sense-Making of Assessment Feedback at a South African University' was copy edited for layout (including numbering, pagination, heading format, justification of figures and tables), grammar, spelling and punctuation as well as references by the undersigned. The document was subsequently proofread and a number of additional corrections were advised.

The undersigned takes no responsibility for corrections/amendments not carried out in the final copy submitted for examination purposes.

A handwritten signature in purple ink, appearing to read "Barbara L. Mutula-Kabange".

Mrs. Barbara L. Mutula-Kabange

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